Fishery Management Report No. 92-1

Proposals Considered and Changes Made to the Regulatory Structure of the Sport Fishery in the Arctic-Yukon-Kuskokwim Region of Alaska by the Alaska Board of Fisheries at their February 1992 Meeting

by

John H. Clark,
Frederick Andersen,
and
Jerome Hallberg

May 1992

Alaska Department of Fish and Game

Division of Sport Fish

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PROPOSALS CONSIDERED AND CHANGES MADE TO THE REGULATORY STRUCTURE OF THE SPORT FISHERY IN THE ARCTIC-YUKON-KUSKOKWIM REGION OF ALASKA BY THE ALASKA BOARD OF FISHERIES AT THEIR FEBRUARY 1992 MEETING[1]

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Alaska Department of Fish and Game
Division of Sport Fish
Anchorage, Alaska

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The Fishery Management Reports series was established in 1989 for the publication of an overview of Division of Sport Fish management activities or management goals in a specific geographic area. Fishery Management Reports are intended for fishery and other technical professionals, as well as lay persons. Distribution is to state and local publication distribution centers, libraries and individuals and, on request, to other libraries, agencies, and individuals. This publication has undergone editorial and peer review.

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ABSTRACT

From February 4 - 10, 1992, the Alaska Board of Fisheries met in Bethel, Alaska, and considered thirteen proposed changes to the regulatory structure of the recreational fishery in the Arctic-Yukon-Kuskokwim Region of Alaska. Oral and written reports by staff of the Alaska Department of Fish and Game and written and oral testimony by members of the public and by representatives of several Advisory Committees were provided to the Alaska Board of Fisheries during this meeting. The Board of Fisheries adopted twelve of these regulatory proposals in either their original or an amended form. They took no action on one of the proposed changes to the sport fishery regulations. Proposals considered, Alaska Department of Fish and Game staff comments, and Alaska Board of Fisheries decisions concerning these thirteen regulatory actions are provided.

KEY WORDS: Arctic, Yukon, Kuskokwim, Tanana, sport fishery, fishery management, regulations

INTRODUCTION

On October 1, 1990, the Alaska Board of Fisheries (Board) announced that it would consider proposed changes to sport, commercial, personal use, and subsistence fishing regulations in the Arctic-Yukon-Kuskokwim Region (AYK) of Alaska. The Board requested that proposed changes be submitted to the Division of Boards of the Alaska Department of Fish and Game (ADF&G) at Box 3-2000, Juneau, Alaska 99802-2000 by April 10, 1991. After these proposed regulatory changes to AYK sport fishery regulations were submitted to the Juneau office of ADF&G, they were combined with other proposed changes for various Alaska finfish fisheries into a single 256 page packet of 395 proposals that was widely distributed to interested organizations and the general public on August 1, 1991. On August 1, 1991, the Board provided legal notice that it would consider proposed changes to finfish regulations for AYK fisheries at a meeting in Bethel planned for February 4-14, 1992. The purpose of this report is:

(1) to summarize and document the proposed changes to AYK sport fishing regulations that the Board considered at the meeting in Bethel, Alaska;

(2) to summarize and document actual changes made to AYK sport fishing regulations by the Board at this meeting; and,

(3) to document information provided to the Board by ADF&G staff and the public relative to proposed changes in the AYK sport fishery regulations.

PROPOSED CHANGES TO AYK SPORT FISHERY REGULATIONS

A total of 13 proposed changes to AYK sport fishing regulations were submitted to the Division of Boards of ADF&G in response to the Board's October 1, 1990, request. Eleven of the proposed changes were submitted by ADF&G staff. One proposal was submitted by a member of the public. There was one carry-over proposal from the 1989/90 Board of Fisheries meeting cycle that was originally submitted by an advisory committee. The 13 proposals are listed below exactly as they were printed in the public review packet (except for misspellings and metric equivalents). The reference numbers for proposals used in this request were assigned by staff of the Division of Boards as the 256 page packet was developed for public review. Scientific and common names of fishes listed in the proposals, the appendix, and elsewhere in this report are provided in Table 1. English units of measurements were used exclusively in the proposal packet and metric units of measurement have been added in parenthesis.

PROPOSAL 277 - 5 AAC 70.050 WATERS CLOSED TO SPORT FISHING. This proposal closes a section of the Chatanika River drainage to fishing for king salmon.

In the Chatanika River, upstream from a department marker located approximately one mile [1.6 km] upstream from the Elliot Highway bridge, is closed to the taking of king salmon.

Table 1. List of scientific and common names of fish included in this report along with names of fish as used in several of the regulatory proposals.

Scientific Name	Common Name	Other Names Used in Proposals
Oncorhynchus tshawytscha	chinook salmon	king salmon
Oncorhynchus keta	chum salmon	
Oncorhynchus kisutch	coho salmon	silver salmon
Oncorhynchus gorbuscha	pink salmon	
Oncorhynchus nerka	sockeye salmon	
Oncorhynchus mykiss	rainbow trout	
Salvelinus alpinus	Arctic char	
Salvelinus malma	Dolly Varden	
Salvelinus namaycush	lake trout	
Thymallus arcticus	Arctic grayling	grayling
Esox lucius	northern pike	pike
Coregonus sardinella	least cisco	whitefish
Coregonus laurettae	Bering cisco	whitefish
Coregonus autumnalis	Arctic cisco	whitefish
Coregonus pidschian	humpback whitefish	whitefish
Prosopium cylindraceum	round whitefish	whitefish
Coregonus nasus	broad whitefish	whitefish
Lota lota	burbot	
Stenodus leucichthys	inconnu	sheefish
Osmerus mordax	rainbow smelt	smelt
Hippoglossus stenolepis	Pacific halibut	halibut

PROBLEM: Harvest of Chatanika River king salmon has increased dramatically in recent years. Although current escapement data is not available, recent harvests exceed the observed escapement in some years. In order to reduce harvest, yet allow some consumptive use of this stock to continue, it is necessary to impose restrictions on the fishery. This proposal would establish a spawning ground closure which is consistent with regulations on the Salcha, Chena, and Goodpaster rivers.

WHAT WILL HAPPEN IF NOTHING IS DONE? Probable reduction in the size of the Chatanika king salmon population.

WHO IS LIKELY TO BENEFIT? Recreational anglers who wish to continue to harvest king salmon from the Chatanika River.

WHO IS LIKELY TO SUFFER? Sport anglers who wish to continue to harvest king salmon from the spawning grounds on the Chatanika River.

OTHER SOLUTIONS CONSIDERED? A total closure of this fishery was considered, however, it is believed that this proposed restriction will accommodate conservation concerns and allow continued recreational fishing opportunities.

PROPOSED BY: Alaska Department of Fish and Game (HQ-91-F-238)

PROPOSAL 278 - 5 AAC 70.020 BAG LIMITS, POSSESSION LIMITS, AND SIZE LIMITS. This proposal establishes a uniform bag and possession limit for king salmon in all flowing waters of the Tanana River drainage.

In all flowing waters of the Tanana River drainage, the bag and possession limit for king salmon is 1.

PROBLEM: This and two companion proposals, are submitted to establish simplified regulations for anadromous salmon and land-locked salmon in the Tanana Area.

Sport fishing regulations can be simplified by deleting reference to king salmon under 16 inches [406 mm] in length because, in the flowing waters of the Tanana drainage, anadromous king salmon under 16 inches [406 mm] in length are rare and need not be addressed in the regulations.

WHAT WILL HAPPEN IF NOTHING IS DONE? Anglers will continue to be confused by the king salmon regulations in both flowing and stocked waters.

WHO IS LIKELY TO BENEFIT? Tanana area salmon anglers.

WHO IS LIKELY TO SUFFER? Unknown.

OTHER SOLUTIONS CONSIDERED? Leave the regulation as is. Rejected, as anglers would continue to have difficulty understanding the confusing regulations.

PROPOSED BY: Alaska Department of Fish and Game (HQ-91-F-239)

PROPOSAL 279 - 5 AAC 70.020 BAG LIMITS, POSSESSION LIMITS, AND SIZE LIMITS. This proposal establishes a uniform bag and possession limit for salmon in all lakes within the Tanana regulatory area.

In all lakes within the Tanana regulatory area, the bag and possession limit for salmon is 10.

PROBLEM: All landlocked salmon present in the Tanana regulatory area are stocked from state hatcheries. Staff have no conservation concerns regarding these stocked fish. There are no biological or conservation reasons for a length limit on salmon in lakes within the Tanana regulatory area. These regulations are unnecessary and confusing to sport anglers and should be clarified by deleting any reference to a size limit.

WHAT WILL HAPPEN IF NOTHING IS DONE? Regulations will remain confusing.

WHO IS LIKELY TO BENEFIT? Tanana area salmon anglers.

WHO IS LIKELY TO SUFFER? Unknown.

OTHER SOLUTIONS CONSIDERED? Leave regulation as is. Rejected, as anglers would continue to have difficulty understanding the regulations.

PROPOSED BY: Alaska Department of Fish and Game (HQ-91-F-240)

PROPOSAL 280 - 5 AAC 70.020 BAG LIMITS, POSSESSION LIMITS, AND SIZE LIMITS. This proposal establishes a uniform bag and possession limit for salmon, other than king salmon, in all flowing waters of the Tanana River drainage.

In all flowing waters of the Tanana drainage, the bag and possession limit for salmon, other than king salmon, is 3.

PROBLEM: There are no biological or conservation reasons for a length limit on salmon in the flowing waters of the Tanana drainage. These regulations are unnecessary and confusing to sport anglers and should be clarified by deleting any reference to size limit. Bag and possession limits remain unchanged.

WHAT WILL HAPPEN IF NOTHING IS DONE? Anglers will continue to be confused by unnecessary regulations.

WHO IS LIKELY TO BENEFIT? Tanana area salmon anglers.

WHO IS LIKELY TO SUFFER? Unknown.

OTHER SOLUTIONS CONSIDERED? Leave the regulation as is. Rejected, as the regulations can be simplified by adopting the proposed change.

PROPOSED BY: Alaska Department of Fish and Game (HQ-91-F-241)

PROPOSAL 281 - 5 AAC 70.050 WATERS CLOSED TO SPORT FISHING. This proposal closes specific marine waters of Norton Sound and the freshwater drainages that flow into Norton Sound to sport fishing for chum salmon.

In Norton Sound, the waters of Safety Sound and Bonanza Channel inside the barrier spit and Safety Bridge, the marine waters from Cape Nome Jetty west to include the Sinuk River, and the freshwater drainages that flow into Norton Sound are closed to the taking of chum salmon.

PROBLEM: The depleted condition of chum salmon stocks in a portion of Norton Sound requires severe restrictions to fisheries which harvest these stocks. Similar restrictions are being proposed for the subsistence chum salmon fishery in the same area.

WHAT WILL HAPPEN IF NOTHING IS DONE? A continuation of poor escapements and low production of chum salmon from streams in this area.

WHO IS LIKELY TO BENEFIT? All users of this resource (sport, commercial, and subsistence) will benefit from this action.

WHO IS LIKELY TO SUFFER? In the short term, consumptive recreational salmon fishermen will be adversely impacted by this restriction.

OTHER SOLUTIONS CONSIDERED? Maintaining current regulations or imposing lower sport fishing bag limits are possible alternatives, but are insufficient for purposes of rebuilding these chum salmon stocks.

PROPOSED BY: Alaska Department of Fish and Game (HQ-91-F-242)

PROPOSAL 282 - 5 AAC 70.020 BAG LIMITS, POSSESSION LIMITS, AND SIZE LIMITS. This proposal establishes a uniform bag and possession limit for rainbow trout in all waters of the Tanana River drainage.

In all waters of the Tanana regulatory area, the bag and possession limit for rainbow trout is 10.

PROBLEM: All rainbow trout present in the Tanana River drainage are stocked from state hatcheries and do not reproduce naturally in this area. Staff have no conservation concerns regarding these stocked fish. Increasing the daily bag limit from 5 to 10 fish is intended to allow fuller utilization of these fish and may help to draw fishing pressure away from wild stocks which are able to withstand only light harvest pressure.

WHAT WILL HAPPEN IF NOTHING IS DONE? Continued under-utilization of rainbow trout stocked into the Tanana River drainage.

WHO IS LIKELY TO BENEFIT? Recreational anglers in the Tanana River drainage

WHO IS LIKELY TO SUFFER? Unknown.

OTHER SOLUTIONS CONSIDERED? Continuation of status quo. Rejected because it is not cost effective.

PROPOSED BY: Alaska Department of Fish and Game (HQ-91-F-243)

PROPOSAL 283 - 5 AAC 70.050 WATERS CLOSED TO SPORT FISHING. This proposal creates a catch and release sport fishery for Arctic grayling on a section of the Chena River drainage.

In the Chena River drainage, upstream from the Chena River dam, grayling may not be possessed or retained.

PROBLEM: Historically, the Chena River Arctic grayling population was estimated to range from 50,000 to 100,000 fish. Excessive harvest and poor survival conditions during the early 1980's however, combined to reduce the abundance to approximately 25,000 fish in recent years. In spite of a series of restrictions placed on the fishery in 1987, 1988, and 1990, the Chena River grayling population remains in a depressed state. Although harvest has been reduced somewhat, current rates of exploitation of spawners (currently estimated at 36-48%) prevents recovery of this stock. A further reduction in harvest coupled with other measures is required to restore this stock to previous levels of abundance.

WHAT WILL HAPPEN IF NOTHING IS DONE? Continuation of excessive exploitation rates which will prevent recovery of this important Arctic grayling stock.

WHO IS LIKELY TO BENEFIT? Recreational anglers in interior Alaska.

WHO IS LIKELY TO SUFFER? In the short term, consumptive anglers will be adversely affected.

OTHER SOLUTIONS CONSIDERED? Total closure of the entire Chena River is a possible alternative, however this was rejected as being unnecessarily restrictive.

PROPOSED BY: Alaska Department of Fish and Game (HQ-91-F-244)

PROPOSAL 284 - 5 AAC 70.020 BAG LIMITS, POSSESSION LIMITS, AND SIZE LIMITS; 5 AAC 70.035 METHODS AND MEANS; and 5 AAC 70.050 WATERS CLOSED TO SPORT FISHING. This proposal establishes a catch and release fishery for Arctic grayling in the Nome Creek drainage during the spawning season; allows only unbaited, single-hook artificial lures; and establishes a bag and possession limit of 5 fish per day with a minimum size limit of 12 inches [305 mm].

5 AAC 70.050. In the Nome Creek drainage, the bag and possession limit for grayling is 5. The minimum legal size is 12 inches [305 mm].

5 AAC 70.035. Only unbaited, artificial lures may be used in the Nome Creek drainage.

5 AAC 70.050. In the Nome Creek drainage, Arctic grayling may not be possessed or retained from April 1 to the first Saturday in June.

PROBLEM: Improved road access and planned campground development by the U. S. Bureau of Land Management is causing increased angler pressure on Nome Creek, tributary to Beaver Creek, in the Yukon River drainage near Fairbanks. Use will increase dramatically above current levels if construction of campground facilities proceeds as scheduled within three years. The stream is relatively small and quality fishing opportunities for Arctic grayling will decline if further harvest restrictions are not enacted.

WHAT WILL HAPPEN IF NOTHING IS DONE? Quality fishing opportunities for Arctic grayling in Nome Creek will decrease unless further conservation measures are enacted.

WHO IS LIKELY TO BENEFIT? Sport anglers wishing to successfully fish for Arctic grayling in Nome Creek in future years.

WHO IS LIKELY TO SUFFER? Anglers wishing to continue to catch and retain 10 Arctic grayling (of any size) in this drainage.

OTHER SOLUTIONS CONSIDERED? 1. Do nothing - rejected because of the unacceptable risk of stock depletion in the face of increasing angler pressure. 2. Close Nome Creek Arctic grayling fishery - Rejected since the stock is not known to be in desperate condition at the present time. Moderate conservation measures will protect stocks and still allow a safe level of consumptive use to occur.

PROPOSED BY: Alaska Department of Fish and Game (HQ-91-F-245)

PROPOSAL 285 - 5 AAC 70.020 BAG LIMITS, POSSESSION LIMITS, AND SIZE LIMITS; 5 AAC 70.035 METHODS AND MEANS; and 5 AAC 70.050 WATERS CLOSED TO SPORT FISHING. This proposal establishes a catch and release fishery for Arctic grayling in the Chatanika River drainage during the spawning season; allows only unbaited, single hook artificial lures in a section of the Chatanika River; and establishes a minimum size limit of 12 inches [305 mm].

5 AAC 70.020. In the Chatanika River drainage, upstream from department markers placed approximately one mile [1.6 km] upstream from the Elliot Highway bridge, the minimum legal size for grayling is 12 inches [305 mm].

5 AAC 70.035. Only unbaited, artificial lures may be used in the Chatanika River drainage.

5 AAC 70.050. In the Chatanika River drainage, Arctic grayling may not be possessed or retained from April 1 to the first Saturday in June.

PROBLEM: The likely over-harvest of Chatanika River Arctic grayling by the rapidly growing recreational fishery is indicated by recent research findings on the Chatanika Arctic grayling stocks which show that the sex and size composition of this stock is skewed towards small fish. This finding is

consistent with other Tanana River grayling stocks which have been over-harvested.

WHAT WILL HAPPEN IF NOTHING IS DONE? It is probable that unacceptably high harvest rates will continue and that this population will decline under the current regulations and anticipated effort levels.

WHO IS LIKELY TO BENEFIT? Recreational anglers wishing to preserve the Chatanika River Arctic grayling population at current levels.

WHO IS LIKELY TO SUFFER? Recreational anglers who wish to continue to legally harvest immature grayling and to take grayling during the spawning period.

OTHER SOLUTIONS CONSIDERED? Do nothing - This alternative was rejected because of the unacceptable risk of stock depletion in the face of increasing angler pressure. Another option is to close the Chatanika River Arctic grayling fishery. This approach was rejected since the stock is considered to be capable of sustaining continued consumptive use under the proposed regulatory restrictions.

PROPOSED BY: Alaska Department of Fish and Game (HQ-91-F-246)

PROPOSAL 286 - 5 AAC 70.101 FISHING SEASONS. 5 AAC 70.020 BAG LIMITS, POSSESSION LIMITS, AND SIZE LIMITS. Change the season and bag limit to the following: Grayling: entire year; 2 per day 2 in possession; and no size limit.

PROBLEM: The hook and release fishing from April 1 to the 1st Saturday in June does not work. It kills more fish than it saves. Also, it is the only place to catch grayling within 30 miles [48 km] of Tok and is a good place for kids and the elderly to fish.

WHAT WILL HAPPEN IF NOTHING IS DONE? Fish will die because of improper handling during hook and release.

WHO IS LIKELY TO BENEFIT? The residents of the Tanana Valley - adults and kids. Also, tourists who want to catch their first grayling.

WHO IS LIKELY TO SUFFER? Nobody.

OTHER SOLUTIONS CONSIDERED? None.

PROPOSED BY: John Barker (HQ-91-F-60)

PROPOSAL 287 - 5 AAC 70.050 WATERS CLOSED TO SPORT FISHING. This proposal closes seasons for fishing for whitefish in the Chatanika River drainage.

In the Chatanika River, downstream from a department marker located approximately one mile [1.6 km] upstream from the Elliot Highway bridge, whitefish may not be taken from October 1 through April 30.

In the Chatanika River, upstream from a department marker located approximately one mile [1.6 km] upstream from the Elliot Highway bridge, whitefish may not be taken from September 1 through April 30.

PROBLEM: Declining numbers of whitefish (least cisco and humpback whitefish) in the Chatanika River.

WHAT WILL HAPPEN IF NOTHING IS DONE? Further reductions in the abundance of these two species of whitefish would threaten the viability of the Chatanika River spear fishery.

WHO IS LIKELY TO BENEFIT? Sport anglers wishing to successfully fish for whitefish in the Chatanika River in future years.

WHO IS LIKELY TO SUFFER? Anglers wishing to continue to spear whitefish in October or along the Steese Highway.

OTHER SOLUTIONS CONSIDERED? 1. Do nothing. This is not a viable option because it is likely that whitefish stocks will collapse if conservation actions are not taken and this will lead to a total closure of the fishery. 2. Reducing the bag limit is not considered viable as it is thought that fishermen will compensate for decreases in the bag limit by taking more trips. The combination of restricting the season and area, as well as prohibiting the use of Chatanika River whitefish for bait are considered to be sufficient restrictions.

PROPOSED BY: Alaska Department of Fish and Game (HQ-91-F-247)

PROPOSAL 288 - 5 AAC 70.020 BAG LIMITS, POSSESSION LIMITS, AND SIZE LIMITS; 5 AAC 70.035 METHODS AND MEANS. This proposal provides additional protection to northern pike populations in the Tanana River drainage prior to and during their spawning period.

Actual wording of the regulatory proposal is being developed by staff. Options to be presented to the Board of Fisheries include, but are not limited, to the following:

1. seasonal closures;
2. size restrictions;
3. bag and possession limit restrictions;
4. gear restrictions; and,
5. catch and release regulations.

PROBLEM: The potential over-harvest of mature northern pike during and prior to spawning should be addressed. Protective measures are required in some areas to ensure spawning success and to preserve normal age, sex, and size composition of Tanana drainage pike populations.

WHAT WILL HAPPEN IF NOTHING IS DONE? Possible over-harvest and undesirable alteration of historic age, size, and sex composition of Tanana drainage pike populations.

WHO IS LIKELY TO BENEFIT? Sport anglers who wish to continue to harvest northern pike from the Tanana drainage.

WHO IS LIKELY TO SUFFER? Anglers who wish to continue to harvest northern pike during the spawning season.

OTHER SOLUTIONS CONSIDERED? Retention of status quo regulations. This option is considered ineffective during the spawning season.

PROPOSED BY: Alaska Department of Fish and Game (HQ-91-F-248)

PROPOSAL 289 - 5 AAC 70.035 METHODS AND MEANS. Sport fishermen will be required to keep the fish they catch. Once a person has caught their limit of any species of fish, they must stop fishing. Bag and possession limits should be decreased to protect the fish populations while at the same time allowing people a reasonable number of fish to take home.

EDITOR'S NOTE: This proposal is a carry over from the 1989-90 meeting cycle.

PROBLEM: Allowing catch and release sport fishing on the Goodnews River system results in the waste and injury of fish. Such waste and injury of is not allowed under state law for salmon, big game, or wild fowl. The waste and injury that results from catch and release is offensive to local values. Although catch and release may be an appropriate management technique for other rivers, it is not appropriate for the Goodnews River system. Also, the Board's endorsement of catch and release as an appropriate sport fishing management technique for the Goodnews River system results in increased user days for sport fishermen causes more displacement of subsistence fishermen. Subsistence fishermen are already being displaced by sport fishermen to the point that they do not have a reasonable opportunity to fish on the river.

WHAT WILL HAPPEN IF NOTHING IS DONE? Fish will continue to be wasted and injured. Subsistence fishermen will become increasingly displaced, and will be denied the opportunity to subsistence fish on the river. Increased use by sport fishermen also scares away the game and reduces subsistence hunting.

WHO IS LIKELY TO BENEFIT? The fish and subsistence users.

WHO IS LIKELY TO SUFFER? Only those sport fishermen planning to fish the Goodnews River system, and interested solely in catch and release fishing.

OTHER SOLUTIONS CONSIDERED? None

PROPOSED BY: Central Bering Sea Advisory Committee & Western Region Council (HQ-91-F-213)

MEETING SCHEDULE AND STAFF ATTENDANCE

The Board of Fisheries was called to order at 9:30 AM on February 4, 1992. The meeting was held in the KVNA building in Bethel, Alaska. The Board of Fisheries adjourned at 10:00 PM on February 10, 1992; four days earlier than planned. On most days, the Board met from approximately 8:00 AM to noon and again from approximately 1:30 PM until 8:00 PM. All seven Board of Fisheries members (Michael Martin, Chairman, Anchorage; Trefon Angason, Dillingham; Irving Carlisle, Soldotna; Larry Edfelt, Auke Bay; Tom Elias, Anchorage; John Hanson, Alakanuk; and, Deborah Lyons, Petersburg) were present for the entire meeting except for the late afternoon and evening of February 10th when one Board member returned to Anchorage. Sport Fish Division staff present during the meeting included: Frederick Andersen, AYK Management Supervisor, Fairbanks, February 4 through 10; John H. Clark, AYK Regional Supervisor, Fairbanks, February 4 through 10; Robert A. Clark, Grayling Research Biologist, Fairbanks, February 7th and 8th; Jerome E. Hallberg, Area Biologist, Fairbanks, February 7th and 8th; and, Robert E. Minard, Area Biologist, Dillingham, February 4th and 5th.

A series of 19 oral reports from staff of the ADF&G were provided to the Board and the public between approximately 11:00 AM on February 4th and 6:30 PM on February 5th. The Board of Fisheries was also presented with six written reports from ADF&G staff. Staff from the Division of Commercial Fisheries of ADF&G presented 13 oral and four written reports to the Board concerning: (1) management of commercial and subsistence fisheries of AYK; (2) stock status of AYK salmon; and (3) recent research of AYK salmon. Staff from the Division of Subsistence of ADF&G presented one written and three oral reports concerning subsistence fishing in AYK. Staff from the Division of Fisheries Rehabilitation, Enhancement, and Development of ADF&G presented an oral report concerning on-going and planned ADF&G enhancement of salmon and other finfish stocks in AYK. Robert E. Minard, Dillingham Area Biologist for Sport Fish Division, presented an oral report concerning sport fisheries that take place in Kuskokwim Bay and in the lower Kuskokwim River. Frederick Andersen, AYK Management Supervisor for Sport Fish Division, presented an oral report that provided an overview of the recreational fisheries, current stock status, and ADF&G regulatory recommendations for the AYK sport fishery. A written report concerning AYK sport fisheries was also provided to the Board (Appendix 1).

A total of 54 individuals provided public testimony to the Board concerning proposed regulatory actions for AYK fisheries and other fishery related matters between 6:30 PM on February 5th and 3:00 PM on February 7th. One of the individuals providing testimony was opposed to proposal number 281. None of the rest of the 53 individuals that gave testimony to the Board in Bethel provided any comments concerning the 13 sport fishery related regulatory proposals.

Eight advisory committee representatives provided public testimony to the Board concerning proposed regulatory actions for AYK fisheries and other fishery related matters between 3:00 and 8:00 PM on February 7th. Advisory committees that presented testimony included the Kotzebue, Northern Norton Sound, Grayling-Anvik-Shageluk-Holy Cross, Middle Yukon, Ruby, Tanana-Rampart-

Manley, Minto-Nenana, and Fairbanks committees. Only the Fairbanks Advisory Committee provided comments concerning the 13 sport fishery related regulatory proposals. During testimony, the Fairbanks Advisory Committee supported proposal numbers 277, 278, 279, 280, 282, 284, and 287, as well as an amended version of proposal number 288. During testimony, the Fairbanks Advisory Committee opposed proposal numbers 285 and 289.

The Board of Fisheries went into the proposal deliberations portion of the meeting between 8:30 AM on February 8 and 10:00 PM on February 10th. Proposed changes to the regulations governing the AYK sport fishery were the first proposals considered by the Board.

BOARD ACTIONS CONCERNING AYK SPORT FISHERY REGULATIONS

ADF&G staff comments concerning proposals to change the AYK sport fishery regulations and actions taken by the Alaska Board of Fisheries during their February 1992 meeting in Bethel are summarized below.

PROPOSAL 277 - 5 AAC 70.050 WATERS CLOSED TO SPORT FISHING. This was an ADF&G staff proposal intended to close the section of the Chatanika River drainage upstream from a department marker located approximately 1.6 km upstream from the Elliot Highway bridge to recreational fishing for chinook salmon.

The proposal was read into the record by Jerome Hallberg at 8:30 AM on February 8, 1992, and he then provided staff comments as follows:

> Mr. Chairman, this proposal seeks to provide spawning ground protection for chinook salmon in the Chatanika River (Figure 1). Counts of spawning chinook salmon in the Chatanika River have only been conducted during 12 of the past 20 years (Figure 2). These counts of spawning chinook salmon are based upon aerial surveys conducted by staff of the Division of Commercial Fisheries. The counts are conducted on only a portion of the river. Counts of spawning chinook salmon in the Chatanika River have never exceeded 200 fish. The harvest of chinook salmon by recreational anglers (Figure 3) in some years has exceeded the aerial survey counts of spawning fish. By closing the area of the Chatanika River upstream of a department marker located approximately one mile [1.6 km] above the Elliot Highway bridge to chinook salmon sport fishing, chinook salmon will be protected from harvest while they are in the process of spawning. Recreational anglers will still be afforded the opportunity to fish for chinook salmon in the lower Chatanika River as these fish migrate upstream to their spawning grounds. This regulation if adopted, would be similar to spawning ground closures currently in affect in the Salcha, Chena, and Goodpaster rivers.

The Board passed this proposal with a unanimous vote at 8:40 AM on February 8, 1992.

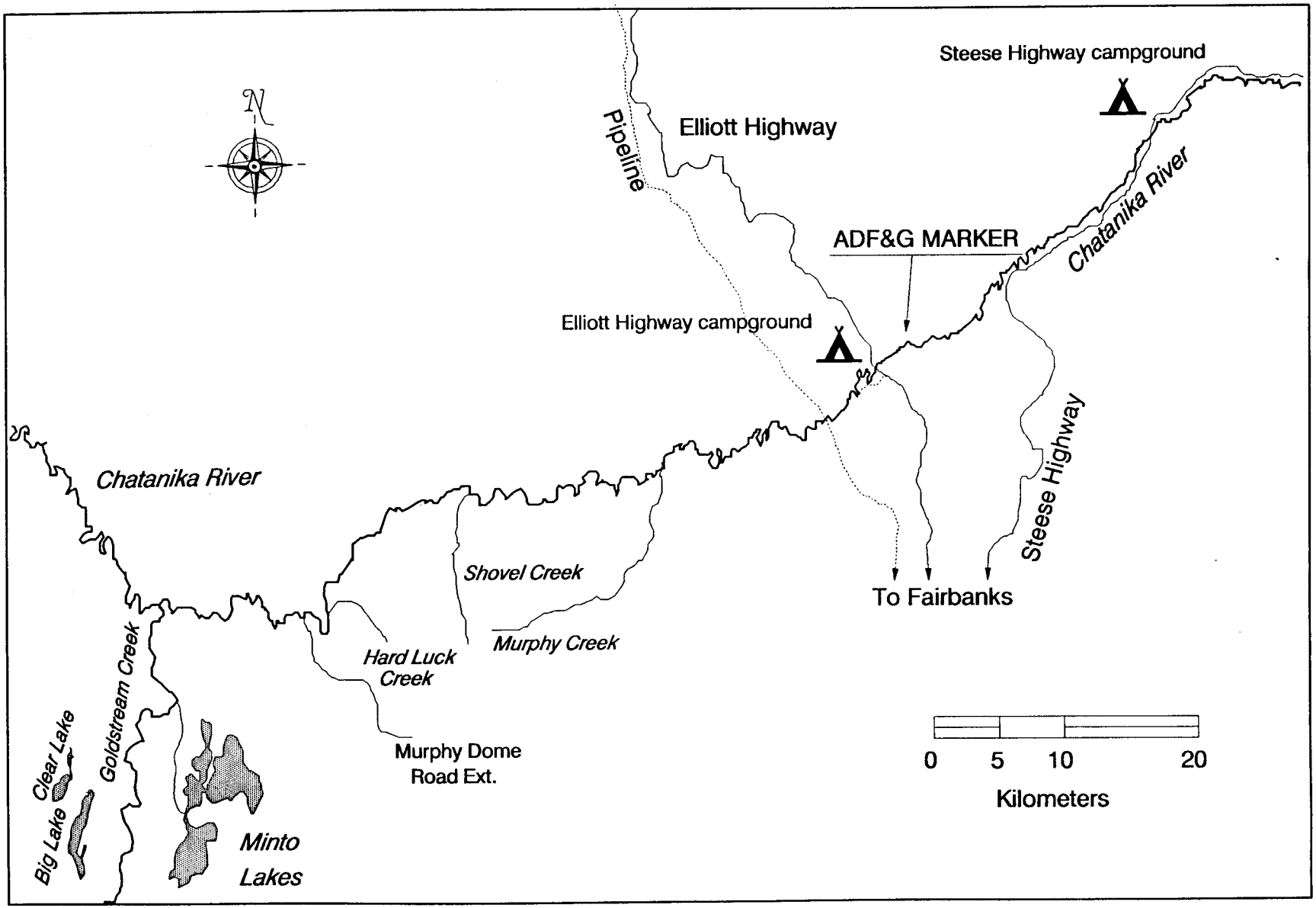


Figure 1. Map of the Chatanika River drainage.

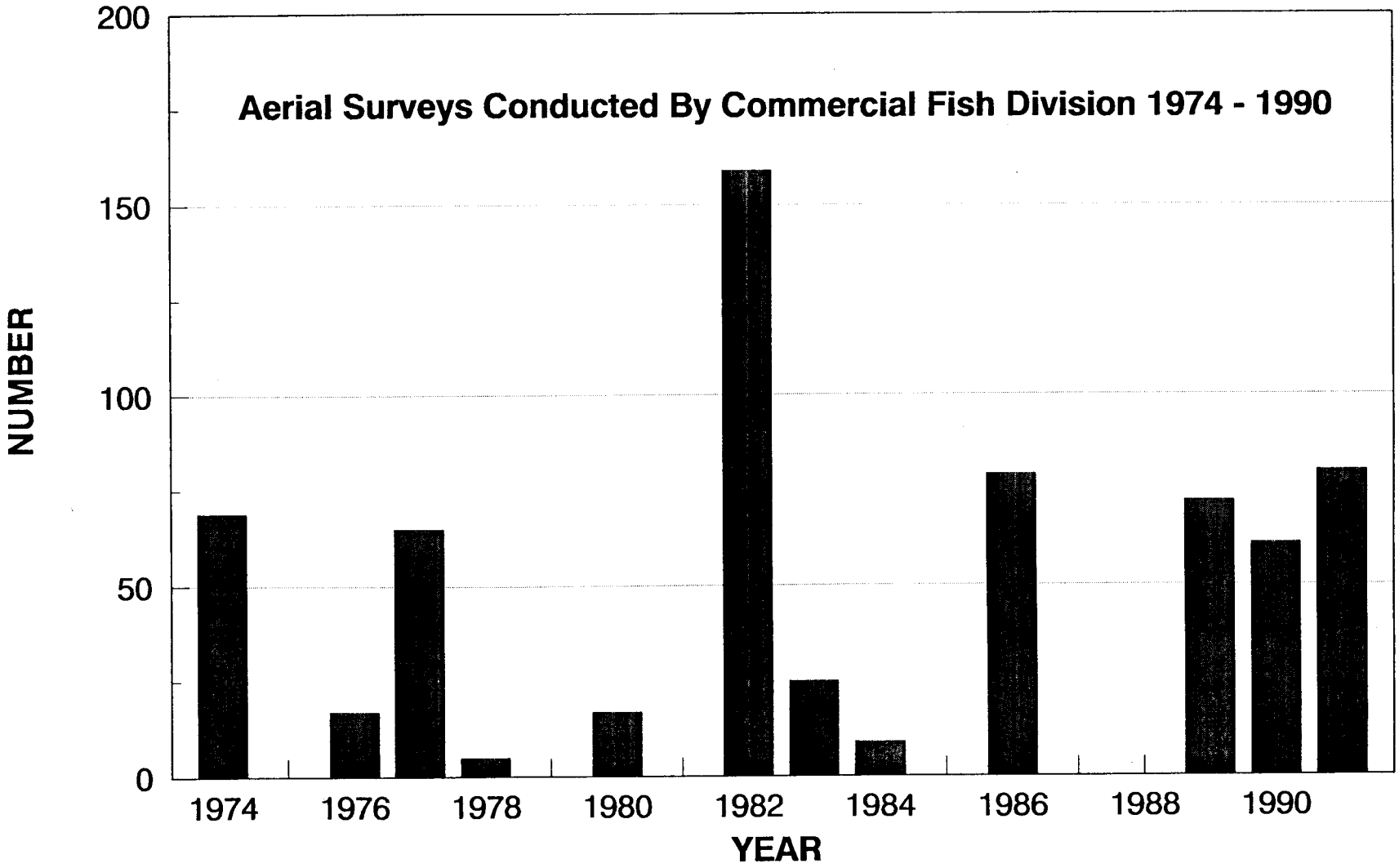


Figure 2. Aerial counts of chinook salmon spawning in the Chatanika River.

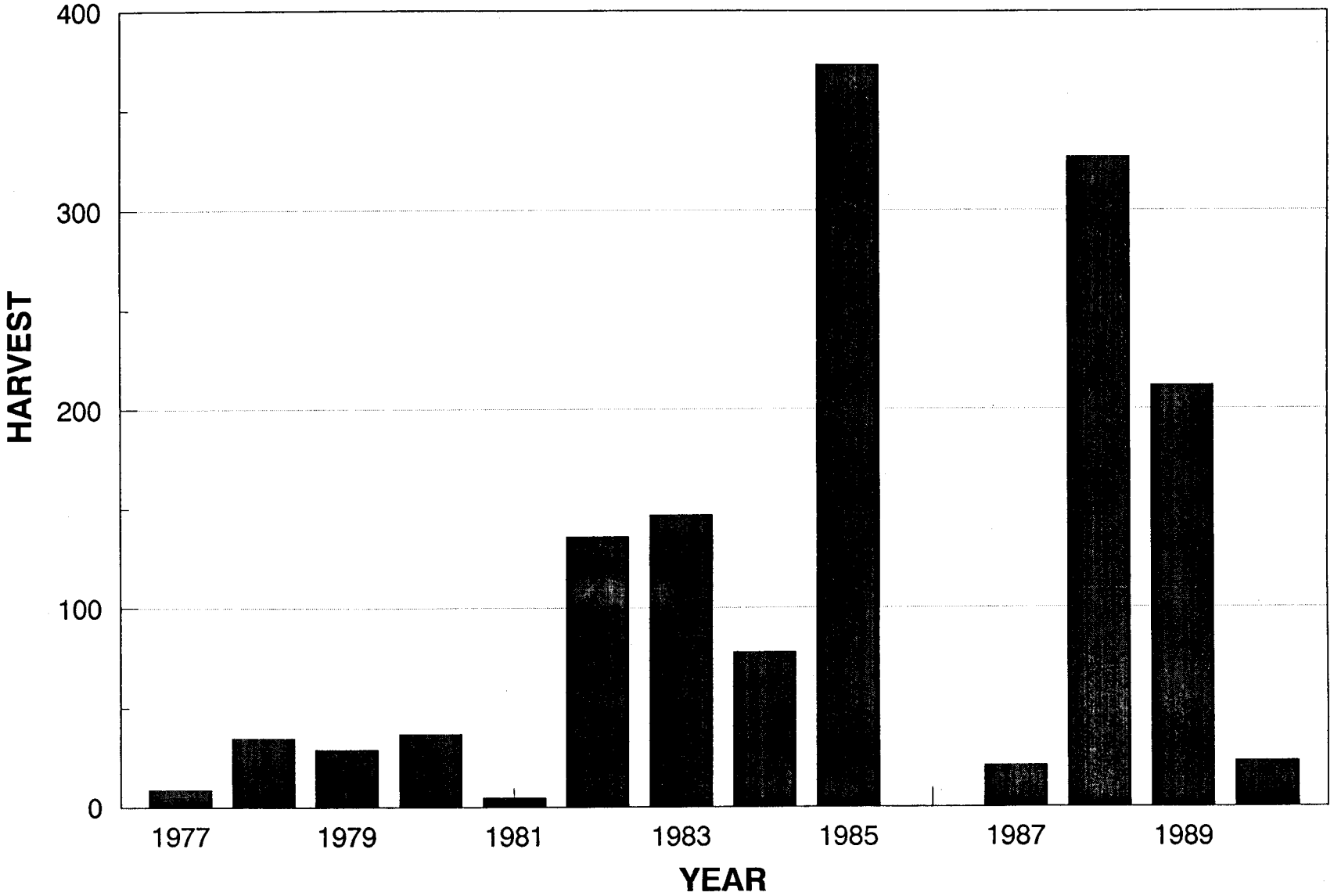


Figure 3. Harvest of chinook salmon from the Chatanika River by recreational fishermen.

PROPOSAL 278 - 5 AAC 70.020 BAG LIMITS, POSSESSION LIMITS, AND SIZE LIMITS. This was an ADF&G staff proposal intended to establish a uniform bag and possession limit of one chinook salmon in all flowing waters of the Tanana regulatory area and to remove the existing restrictions concerning size limits.

The proposal was read into the record by Jerome Hallberg at 8:41 AM on February 8, 1992, and he then provided staff comments as follows:

> Mr. Chairman, proposal numbers 278, 279, and 280 are house-keeping proposals and are intended to provide a simpler set of regulations governing the recreational harvest of anadromous and non-anadromous salmon within the Tanana regulatory area (Figure 4).
>
> Proposal number 278 seeks to set a uniform bag and possession limit of 1 chinook salmon in all flowing waters of the Tanana regulatory area by deleting the existing portion of the regulation referencing chinook salmon less than 16 inches [406 mm]. Anadromous chinook salmon less than 16 inches [406 mm] are rare and almost never caught by sport anglers. During creel census sampling of 135 chinook salmon harvested by sport anglers in the Salcha and Chena river fisheries, none were less than 20 inches [508 mm]. The existing bag and possession limit of 10 chinook salmon less than 16 inches [406 mm] was implemented to regulate the harvest of chinook salmon stocked into land-locked lakes. Chinook salmon have not been stocked into landlocked lakes in the Tanana regulatory area for several years; and, if proposal number 279 is adopted by the Board, recreational anglers would continue to be limited to 10 of these stocked fish in land-locked lakes.

The Board passed this proposal with a unanimous vote at 8:43 AM on February 8, 1992.

PROPOSAL 279 - 5 AAC 70.020 BAG LIMITS, POSSESSION LIMITS, AND SIZE LIMITS. This was an ADF&G staff proposal intended to establish a uniform bag and possession limit of ten salmon in all lakes within the Tanana regulatory area and to remove the existing restrictions concerning size limits.

The proposal was read into the record by Jerome Hallberg at 8:44 AM on February 8, 1992, and he then provided staff comments as follows:

EXISTING REGULATIONS FOR KING SALMON AND OTHER SALMON IN THE TANANA REGULATORY AREA.

TANANA AREA

CODE	SPECIES	OPEN SEASON	BAG, POSSESSION, & SIZE LIMITS
A	KING SALMON		
	16 Inches or more	Entire Year	1 per day, 1 in possession
	Less than 16 inches	Entire Year	10 per day, 10 in possession
B	OTHER SALMON		
	16 Inches or more	Entire Year	3 per day, 3 in possession
	Less than 16 inches	Entire Year	10 per day, 10 in possession

REGULATIONS FOR KING SALMON AND OTHER SALMON IN THE TANANA REGULATORY AREA, IF PROPOSALS NUMBER 278, 279, AND 280 ARE ADOPTED.

TANANA AREA

CODE	SPECIES		OPEN SEASON	BAG, POSSESSION, & SIZE LIMITS
A	KING SALMON (Flowing waters)	(prop # 278)	Entire Year	1 per day, 1 in possession
B	OTHER SALMON (Flowing waters)	(prop # 280)	Entire Year	3 per day, 3 in possession
C	OTHER SALMON (In lakes)	(prop # 279)	Entire Year	10 per day, 10 in possession

Figure 4. Existing and proposed sport fishing regulations for salmon in the Tanana regulatory area.

Mr. Chairman, this proposal is the second portion of a three proposal packet intended to provide a simpler set of regulations governing the recreational harvest of anadromous and non-anadromous salmon within the Tanana regulatory area (Figure 4). Proposal number 279, if adopted by the Board, would delete the existing size limit and establish a 10 salmon bag and possession limit in land-locked lakes of the Tanana regulatory area. All salmon in these lakes of the Tanana regulatory area are stocked and do not reproduce. Most of these stocked fish are coho salmon. Coho salmon stocked into land-locked lakes of the Tanana regulatory area die in their fourth year of life and they seldom reach a length of 16 inches [406 mm]. There is no biological benefit from the existing length limit and the existing regulations pertaining to "other salmon, 16 inches [406 mm] or more, 3 per day, 3 in possession" are unnecessary and confusing to sport anglers. The staff have no conservation concerns for these stocked fish and staff favor this recommended simplification of regulations governing the sport fishery in these land-locked waters.

The Board passed this proposal with a unanimous vote at 8:46 AM on February 8, 1992.

PROPOSAL 280 - 5 AAC 70.020 BAG LIMITS, POSSESSION LIMITS, AND SIZE LIMITS. This was an ADF&G staff proposal intended to establish a uniform bag and possession limit of three salmon, other than chinook salmon, in all flowing waters of the Tanana regulatory area and to remove the existing restrictions concerning size limits.

The proposal was read into the record by Jerome Hallberg at 8:47 AM on February 8, 1992, and he then provided staff comments as follows:

Mr. Chairman, this proposal is the third portion of a three proposal packet intended to provide a simpler set of regulations governing the recreational harvest of anadromous and non-anadromous salmon within the Tanana regulatory area (Figure 4). Proposal number 279, if adopted by the Board, would establish a uniform bag and possession limit of 3 fish for salmon other than chinook salmon and delete the existing size limits in all flowing waters of the Tanana regulatory area. The existing size limit has no biological basis and provides no conservation benefit to anadromous salmon in the Tanana regulatory area. Sport fishermen harvest anadromous coho and chum salmon in flowing waters of the Tanana regulatory area, but fish less than 16 inches [406 mm] are seldom taken. During creel census sampling of 186 sport caught coho salmon, none were less than 16 inches [406 mm]. During carcass sampling of more than 1,000 coho salmon from the Delta Clearwater River, only a few fish were less than 16 inches [406 mm]. Further, when more than 1,000 chum salmon caught in the Tanana commercial fishery were measured, none were less than 16 inches [406 mm]. As a result, the existing size limit is unnecessary and merely causes confusion to anglers. For these reasons, the staff favors adoption of proposal number 280.

The Board passed this proposal with a unanimous vote at 8:49 AM on February 8, 1992.

PROPOSAL 282 - 5 AAC 70.020 BAG LIMITS, POSSESSION LIMITS, AND SIZE LIMITS. This was an ADF&G staff proposal intended to establish a uniform bag and possession limit of 10 rainbow trout in all waters of the Tanana regulatory area and to remove the existing restrictions concerning size limits.

The proposal was read into the record by Jerome Hallberg at 8:50 AM on February 8, 1992, and he then provided staff comments as follows:

> Mr. Chairman, proposal number 282 seeks to establish a uniform bag and possession limit of 10 rainbow trout and seeks to delete the existing size limits for these fish in all waters of the Tanana regulatory area (Figure 5). All rainbow trout in the regulatory area are stocked from state hatcheries. About 700,000 rainbow trout are annually stocked into a variety of lakes and into one stream in the Tanana Valley. About 70,000 rainbow trout are annually harvested by recreational anglers. These stocked fish rarely reach 20 inches [508 mm] in length. During creel census sampling of over 800 rainbow trout from three popular stocked lakes (Birch, Quartz, and Chena lakes), only 2 fish measured more than 20 inches [508 mm]. The existing size limit is unnecessary and is confusing and a nuisance to sport anglers. The staff have no conservation concerns for these stocked fish and by increasing the bag and possession limit to 10 rainbow trout across the regulatory area, the staff anticipates fuller utilization of these stocked fish by the recreational fishing public.

The Board passed this proposal with a unanimous vote at 8:53 AM on February 8, 1992.

PROPOSAL 283 - 5 AAC 70.050 WATERS CLOSED TO SPORT FISHING. This was an ADF&G staff proposal intended to limit Arctic grayling fishing in the Chena River drainage to catch and release only upstream of the Chena River Dam.

The proposal was read into the record by Frederick Andersen at 8:54 AM on February 8, 1992, and he then provided staff comments as follows:

> Mr. Chairman, the Chena River near Fairbanks has historically been the largest recreational Arctic grayling fishery in Alaska with catches ranging from 20,000 to 40,000 fish annually in the early and mid-1980's (Figure 6). These levels of harvest were not sustainable. This over-harvest of grayling by the recreational fishery coupled with poor survival conditions during the early and mid 1980's combined to reduce the abundance of Arctic grayling in the Chena River to a fraction of the historic levels. ADF&G recognized the conservation problem as early as 1986 and despite a series of restrictions imposed on the sport fishery since then (Figure 7), the population dropped from about 65,000 fish as recently as 1986 to approximately 25,000 fish in recent years.

EXISTING REGULATIONS FOR RAINBOW TROUT IN THE TANANA RIVER DRAINAGE.

TANANA AREA

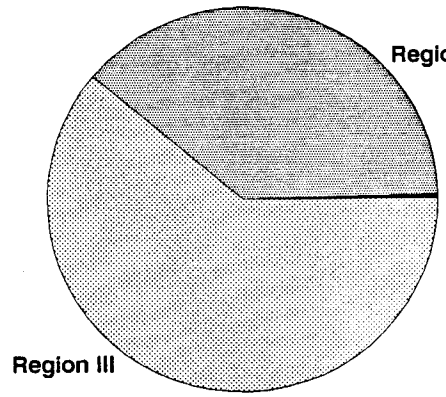
CODE	SPECIES	OPEN SEASON	BAG, POSSESSION, & SIZE LIMITS
C	RAINBOW TROUT (in lakes)		
	20 Inches or more	Entire Year	2 per day, 2 in possession
	Less than 20 inches	Entire Year	10 per day, 10 in possession
D	RAINBOW TROUT (Flowing waters)	Entire Year	5 per day, 5 in possession, no size limit
E	RAINBOW TROUT	Entire Year	3 per day, no size limit

REGULATIONS FOR RAINBOW TROUT IN THE TANANA RIVER DRAINAGE IF PROPOSAL 282 IS ADOPTED.

TANANA AREA

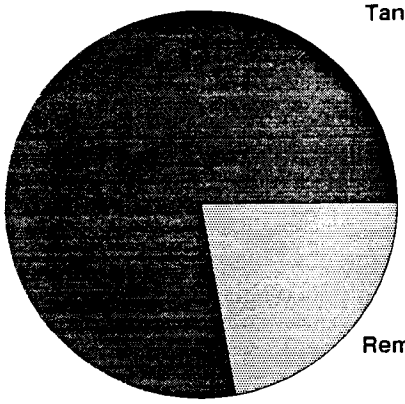
CODE	SPECIES	OPEN SEASON	BAG, POSSESSION, & SIZE LIMITS
D	RAINBOW TROUT (In all waters)	Entire Year	10 per day, 10 in possession, no size limit

Figure 5. Existing and proposed sport fishing regulations for rainbow trout in the Tanana regulatory area.



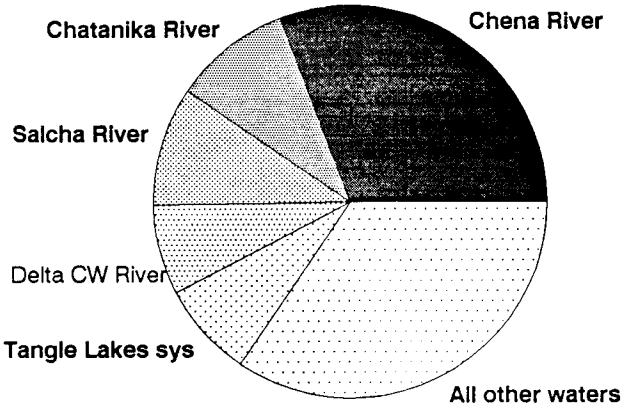
Harvest of Arctic Grayling by Region

Region I	445	<1%
Region II	52,264	38%
Region III	82,984	61%



Harvest of Arctic Grayling within Region III

Tanana River drainage	64,513	78%
Remainder of Region III	18,471	22%



Harvest of Arctic Grayling within the Tanana River drainage

Chena River	19,850	31%
Chatanika River	6,215	10%
Salcha River	6,341	10%
Delta CW River	4,763	7%
Tangle Lakes Sys	5,063	8%
All Other Waters	18,471	44%

Figure 6. Harvests of Arctic grayling by sport fishermen in Alaska, in the AYK Region, and in the Tanana regulatory area.

The regulations governing the sport harvest of Arctic grayling in the Chena River since 1962 are as follows:

Period	Regulation
1962-1974	Daily bag limit of 10 fish, possession limit of 10 fish
1975-1986	Daily bag limit of 5 fish, possession limit of 10 fish
1987	Daily bag limit of 5 fish, possession limit of 5 fish Minimum length limit of 12 inches Fishery closure from 1 April to the first Saturday in June Gear restrictions: Upstream of Chena River Dam - only unbaited artificial lures may be used Downstream of Chena River Dam - bait may be used on hooks with a gap greater than 3/4 inch
1988-1989	Daily bag limit of 5 fish, possession limit of 5 fish Minimum length limit of 12 inches Arctic grayling may not be possessed or retained from 1 April to the first Saturday in June From the confluence of the South Fork (river mile 77) to the first bridge (river mile 88) is designated as catch-and-release water for Arctic grayling - Arctic grayling may not be possessed or retained Gear restrictions: Upstream of Chena River Dam - only unbaited artificial lures may be used Downstream of Chena River Dam - bait may be used on hooks with a gap greater than 3/4 inch
1990-1991	Daily bag limit of 2 fish, possession limit of 2 fish Minimum length limit of 12 inches Arctic grayling may not be possessed or retained from 1 April to the first Saturday in June From the confluence of the South Fork (river mile 77) to the first bridge (river mile 88) is designated as catch-and-release water for Arctic grayling - Arctic grayling may not be possessed or retained Gear restrictions: Upstream of Chena River Dam - only unbaited, single hook, artificial lures may be used Downstream of Chena River Dam - bait may be used on hooks with a gap greater than 3/4 inch

Figure 7. History of sport fishing regulatory actions for the Chena River Arctic grayling fishery.

At the time of the proposal deadline last spring (April), staff felt that creation of a conservation catch and release zone in the upper portion of the Chena River would provide sufficient protection to this stock. In May however, staff got an early indication that the 1990 harvest had again exceeded levels that the staff believed were sustainable and further discerned that exploitation of the spawning stock had reached unacceptably high levels. With this information in hand, staff realized that a total closure of the fishery was necessary and hence an emergency order was issued effective July 1st which imposed conservation catch and release regulations on the entire river. Staff have prepared a suggested amendment to proposal number 283 that would limit sport fishing for Arctic grayling in the entire Chena River and it's tributaries to catch and release. Staff recommend that the Board adopt the amended version of proposal number 283 due to these conservation concerns.

The Board considered the amendment that was developed and recommended by the staff. The amended proposal, called 283 A, was worded as follows:

PROPOSAL 283 A
5 AAC 70.050. WATERS CLOSED TO SPORT FISHING.
(i) in the Chena River and it's tributaries, grayling may not be possessed or retained.

The Board passed amendment 283 A to proposal number 283 with a unanimous vote at 10:00 AM on February 8, 1992. After several Board members stated their reasons for doing so, the Board passed the amended version of the proposal with a unanimous vote at 10:10 AM on February 8, 1992.

PROPOSAL 284 - 5 AAC 70.020 BAG LIMITS, POSSESSION LIMITS, AND SIZE LIMITS; 5 AAC 70.035 METHODS AND MEANS; and 5 AAC 70.050 WATERS CLOSED TO SPORT FISHING. This was an ADF&G staff proposal intended: (1) to establish an Arctic grayling catch and release only fishery in the Nome Creek drainage from April 1 to the first Saturday in June; (2) to establish a five fish bag and possession limit for grayling and a 305 mm minimum size limit for grayling during the remainder of the year in the Nome Creek drainage; and, (3) to limit terminal fishing gear to unbaited, artificial lures in the Nome Creek drainage. The proposal was read into the record by Frederick Andersen at 10:11 AM on February 8, 1992, and he then provided staff comments as follows:

Mr. Chairman, this staff proposal would establish more restrictive regulations for the Arctic grayling fishery on Nome Creek located 30 miles [48 km] north of Fairbanks (Figure 8). The proposed restrictions include: (1) a 12 inch [305 mm] minimum size limit; (2) a no bait restriction; (3) a spring spawning closure (April 1 to the 1st Saturday in June); and, (4) a reduction in the daily bag and possession limit from 10 to 5 fish. The proposal is prompted by a U. S. Bureau of Land Management plan to extend the existing road to parallel this small stream and construct a campground at the end. Little is known about Arctic grayling stock status in Nome Creek, but given the small size of the stream and the likely substantial increase in harvest pressure, these restrictions are considered necessary to prevent over-harvest.

At the February 1990 meeting of the Alaska Board of Fisheries, when the Board was considering the Arctic grayling fishery in the Chena River, concern was expressed by the Board Chairman about possible higher mortality rates associated with Arctic grayling being released by anglers after being captured using bait or with treble hooks. Partially for that reason, research staff of ADF&G have conducted a study of the mortality associated with the catch and release of Arctic grayling (Clark 1991).

At this time, Robert A. Clark presented a short summary of his study to the Board:

Mr. Chairman, this study found that mortality rates of Arctic grayling released after being caught on a variety of terminal gears was very low and that there were no significant differences in the mortality rate to Arctic grayling caught with these various terminal gears. Since staff did not have the results of this study at the time of the proposal deadline last spring, staff recommended the ban on bait fishing for Arctic grayling in this and a subsequent proposal. Because the staff does not have data providing a basis for restricting terminal gear in Arctic grayling fisheries, the Board may want to amend this and the next proposal and thereby delete potential regulatory restrictions to terminal gear.

The Board considered an amendment to the original proposal. The amended proposal, called 284 A, was worded as follows:

PROPOSAL 284 A

5 AAC 70.020. BAG LIMITS, POSSESSION LIMITS, AND SIZE LIMITS.

In the Nome Creek drainage, the bag and possession limit for grayling is 5. The minimum legal size is 12 inches [305 mm].

5 AAC 70.050 WATERS CLOSED TO SPORT FISHING.

In the Nome Creek drainage, Arctic grayling may not be possessed or retained from April 1 to the first Saturday in June.

The Board passed amendment 284 A to proposal number 284 with a unanimous vote at 10:15 AM on February 8, 1992. The Board then considered a second

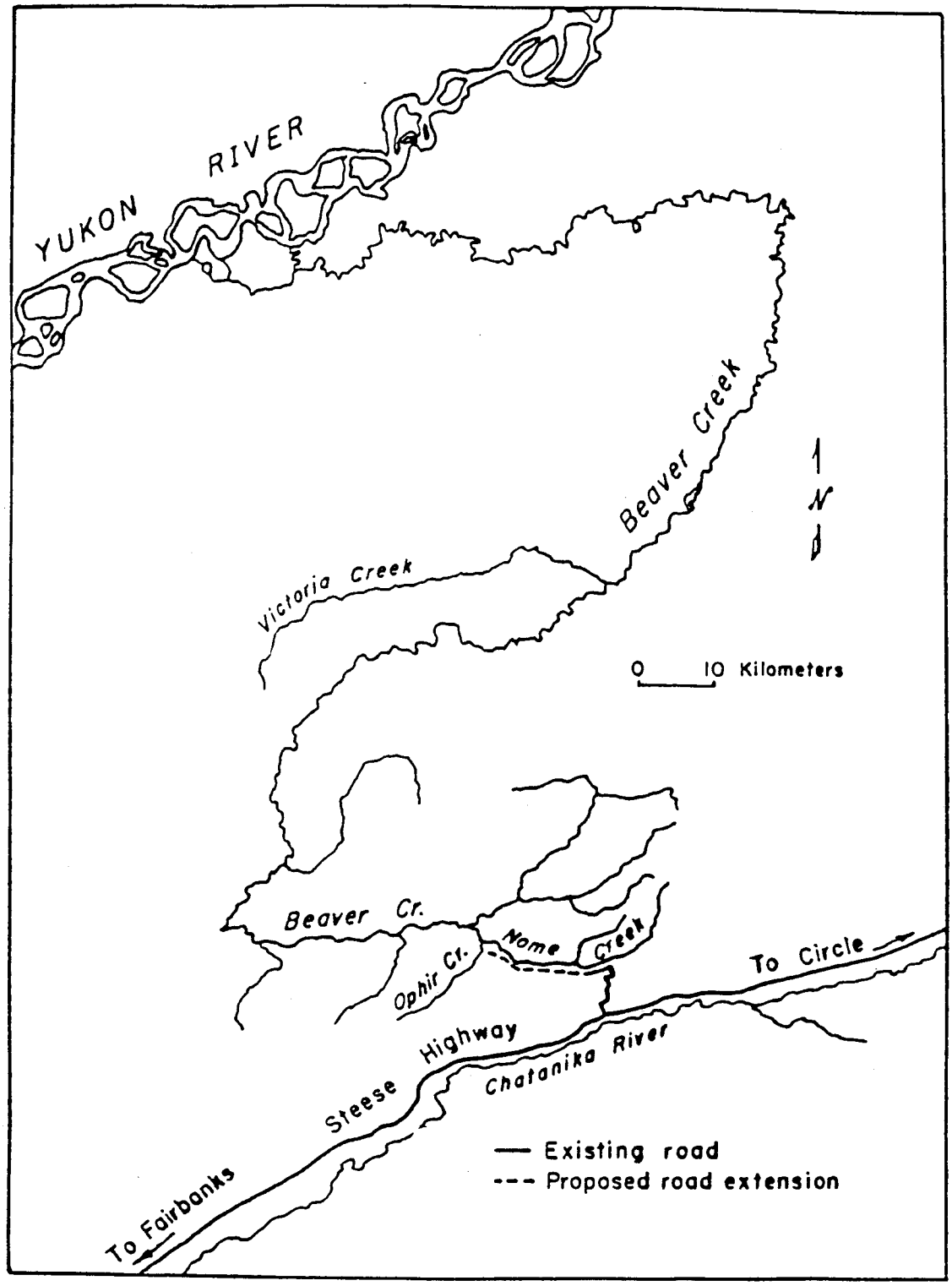


Figure 8. Map of Nome Creek.

amendment, called proposal 284 B. The amended version of the proposal was worded as follows:

PROPOSAL 284 B

5 AAC 70.020. BAG LIMITS, POSSESSION LIMITS, AND SIZE LIMITS.
In the Nome Creek drainage, the bag and possession limit for grayling is 5. The minimum legal size is 12 inches [305 mm].

5 AAC 70.050 WATERS CLOSED TO SPORT FISHING.
In the Nome Creek drainage, Arctic grayling may not be possessed or retained from April 1 to the first Saturday in June.

5 AAC 70.035. METHODS AND MEANS.
Only unbaited single hooks can be used in the Nome Creek Drainage from April 1 to the first Saturday in June.

The Board discussed reasons for terminal gear restrictions of Arctic grayling fisheries. The Board passed amendment 284 B to proposal number 284 with a unanimous vote at 10:20 AM on February 8, 1992. After several Board members stated their reasons for doing so, the Board then passed the twice amended proposal with a unanimous vote at 10:30 AM on February 8, 1992.

PROPOSAL 285 - 5 AAC 70.020 BAG LIMITS, POSSESSION LIMITS, AND SIZE LIMITS; 5 AAC 70.035 METHODS AND MEANS; and 5 AAC 70.050 WATERS CLOSED TO SPORT FISHING. This was an ADF&G staff proposal intended: (1) to establish an Arctic grayling catch and release only fishery in the Chatanika River drainage from April 1 to the first Saturday in June; (2) to establish a 305 mm minimum size limit for grayling in the Chatanika River upstream from department markers placed approximately 1.6 km upstream from the Elliot Highway bridge during the remainder of the year; and, (3) to limit terminal fishing gear to unbaited, artificial lures in the Chatanika River drainage.

The proposal was read into the record by Jerome Hallberg at 10:35 AM on February 8, 1992, and he then provided staff comments as follows:

Mr. Chairman, the Arctic grayling population in the Chatanika River drainage (Figure 1) is showing signs of stress. Total angling pressure in the Chatanika River has averaged about 12,000 angler days in recent years (Figure 9). Harvest of Arctic grayling by anglers has varied, but has approached 10,000 fish in some years (Figure 10). ADF&G's stock assessment program shows that there are few large fish in the upper portion of the Chatanika River where the bulk of the recreational fishery for Arctic grayling occurs. In the upper section of the river, abundance of Arctic grayling is about 400 fish per mile [640 fish per km]; however, only 15% of these fish or 62 per mile [100 per km] are larger than 12 inches [305 mm]. In the less fished downstream portion of the Chatanika River, abundance is about 320 grayling per mile [512 fish per km]. In the downstream section, abundance of grayling over 12 inches [305 mm] is about 165 fish per mile [264 fish per km] representing about 50% of the population. The number of fish above 12 inches [305 mm] represents the bulk of the spawning stock. Abundance of spawners per lineal distance of stream in the lower portion of the river is more than three fold that of the upper portion of the stream. Staff are concerned that the spawning stock is being over-harvested in the upper portions of the Chatanika River.

The staff recommends that the Board implement the spring catch and release only season for Arctic grayling fishing in the Chatanika River to provide a measure of protection to fish while they are spawning. The staff recommends that the Board implement the minimum size limit of 12 inches [305 mm] for Arctic grayling retained by sport fishermen during the remainder of the year in the upper portion of the Chatanika River such that fish residing in this section of the river have an increased opportunity to spawn at least once before being potentially harvested. Further, as staff stated during deliberations concerning proposal number 284, the Board may want to amend this proposal and thereby delete potential regulatory restrictions to terminal gear.

The Board considered an amendment to the original proposal. The amended proposal, called 285 A, was worded as follows:

PROPOSAL 285 A

5 AAC 70.020. BAG LIMITS, POSSESSION LIMITS, AND SIZE LIMITS.

In the Chatanika River drainage, upstream from department markers placed approximately one mile [1.6 km] upstream from the Elliot Highway bridge, the minimum legal size for grayling is 12 inches [305 mm].

5 AAC 70.050 WATERS CLOSED TO SPORT FISHING.

In the Chatanika River drainage, Arctic grayling may not be possessed or retained from April 1 to the first Saturday in June.

The Board passed amendment 285 A to proposal number 285 with a unanimous vote at 10:45 AM on February 8, 1992. The Board then considered a second amendment, called proposal 285 B. The amended version of the proposal was worded as follows:

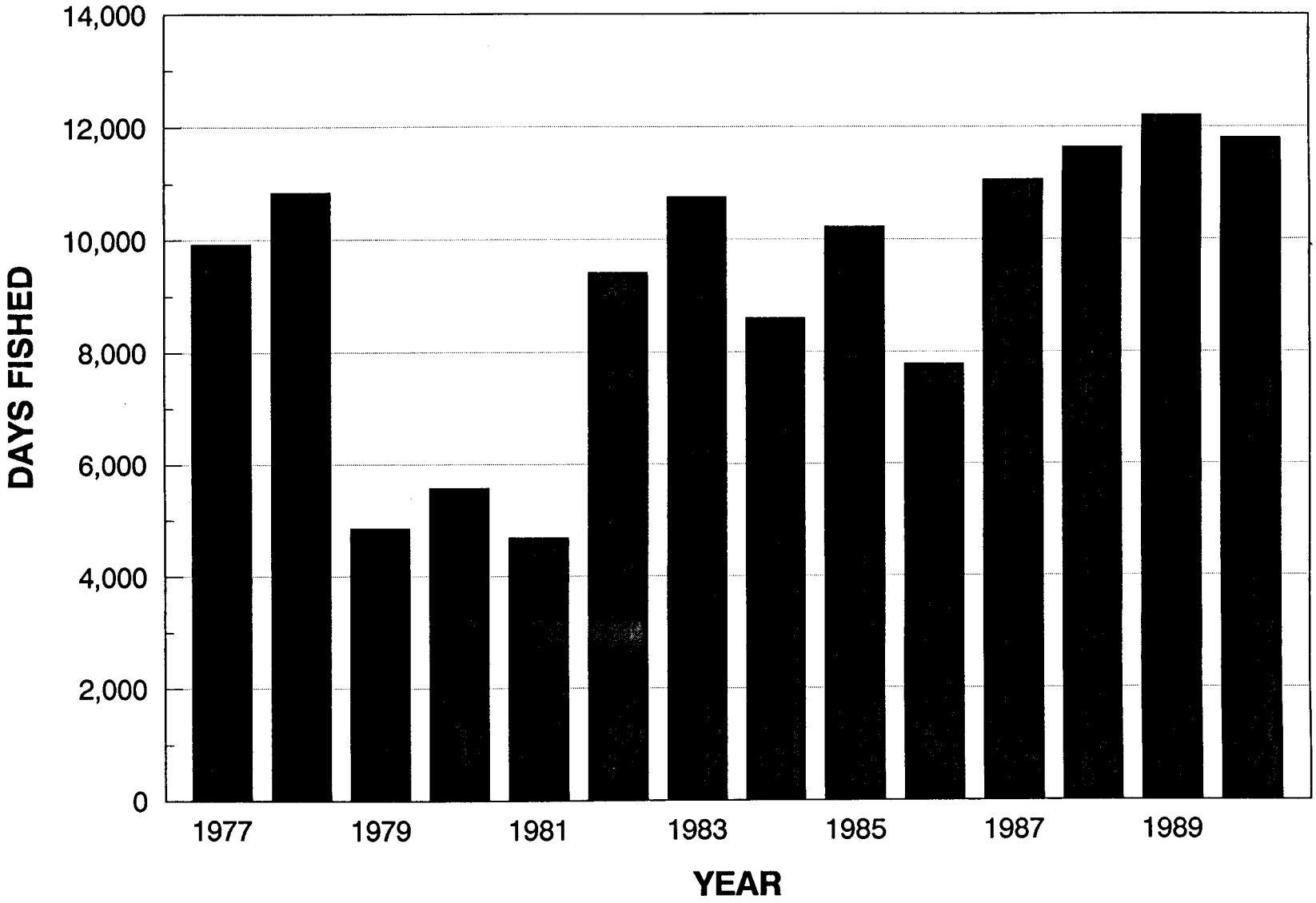


Figure 9. Recreational fishing effort in the Chatanika River, 1977 through 1990.

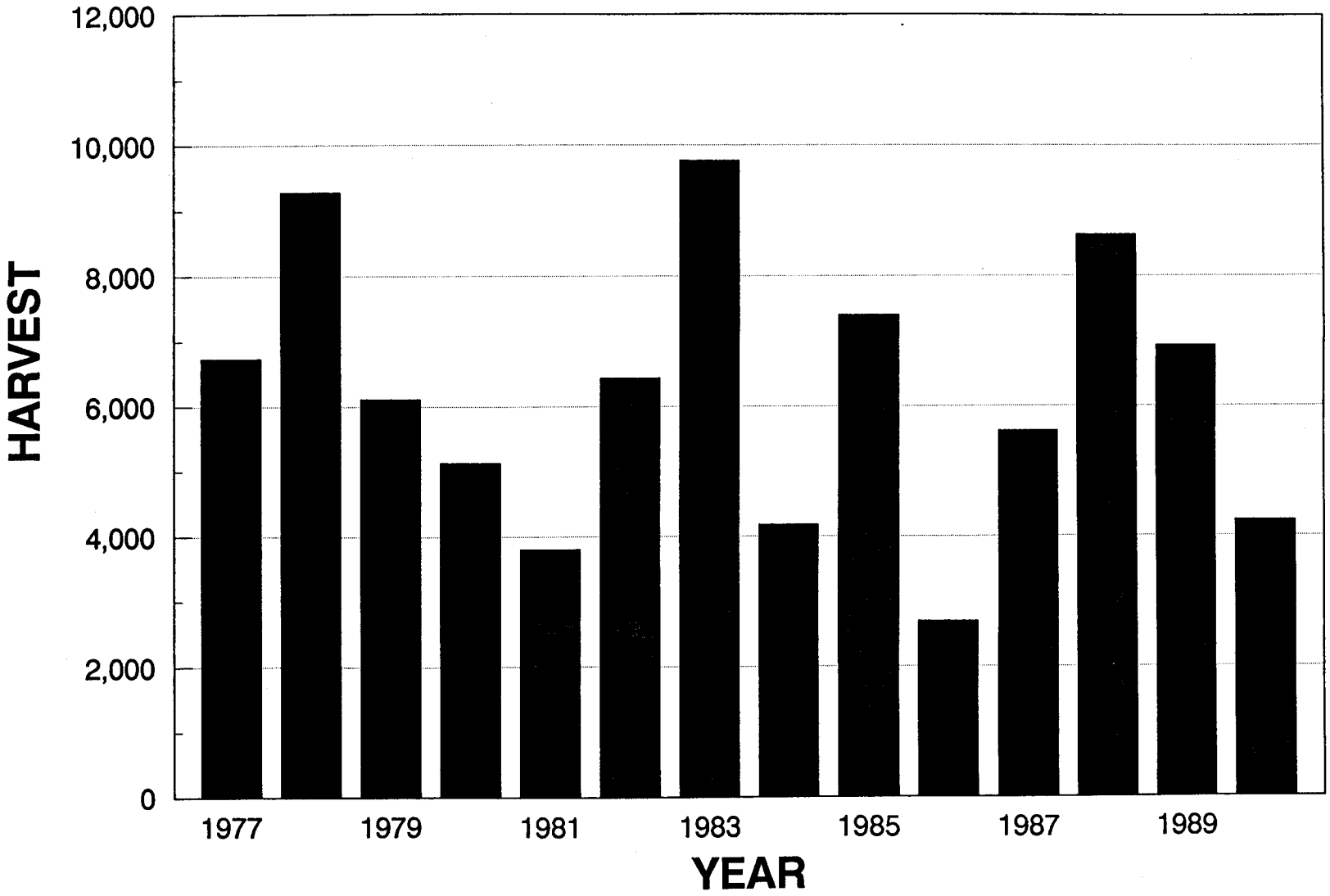


Figure 10. Harvest of Arctic grayling from the Chatanika River, 1977 through 1990.

PROPOSAL 285 B

5 AAC 70.020. BAG LIMITS, POSSESSION LIMITS, AND SIZE LIMITS.

In the Chatanika River drainage, upstream from department markers placed approximately one mile [1.6 km] upstream from the Elliot Highway bridge, the minimum legal size for grayling is 12 inches [305 mm].

5 AAC 70.050 WATERS CLOSED TO SPORT FISHING.

In the Chatanika River drainage, Arctic grayling may not be possessed or retained from April 1 to the first Saturday in June.

5 AAC 70.035. METHODS AND MEANS.

Only unbaited artificial flies or lures using single hooks can be used in the Chatanika River drainage from April 1 to the first Saturday in June.

The Board again discussed reasons for terminal gear restrictions of Arctic grayling fisheries. The Board passed amendment 285 B to proposal number 285 with a unanimous vote at 11:00 AM on February 8, 1992. After several Board members stated their reasons for doing so, the Board then passed the twice amended proposal with a unanimous vote at 11:20 AM on February 8, 1992.

PROPOSAL 286 - 5 AAC 70.101 FISHING SEASONS. 5 AAC 70.020 BAG LIMITS, POSSESSION LIMITS, AND SIZE LIMITS. This was a proposal submitted by Mr. John Barker, a resident of Tok, Alaska. Through a letter written on October 17, 1991, to the Alaska Board of Fisheries, Mr. Barker clarified that it was his recommendation that: (1) the April 1 to the 1st Saturday in June catch and release season for grayling fishing at Mineral Lake Outlet be rescinded; (2) the minimum size limit of 12 inches (305 mm) for grayling at Mineral lake Outlet be rescinded; and, (3) a bag and possession limit of 2 grayling be enacted and in effect during the entire year.

The proposal was read into the record by Frederick Andersen at 10:21 AM on February 8, 1992, and he then provided staff comments as follows:

> Mr. Chairman, this is a public proposal which, if adopted, would repeal the minimum size limit for Arctic grayling, rescind the spring season closure, and establish a 2 fish bag and possession limit at Mineral Lake Outlet near Tok (Figure 11). The current regulations were adopted in 1987 because of public concern about potential over harvest. At that time, ADF&G had no data to either refute or support the restrictions, but staff endorsed the proposal as a precaution against possible over-harvest. Since then, staff have conducted limited stock assessment work at Mineral Lake Outlet in 1988 and 1990 and have thereby collected age, size, and sex related data. Those data indicate a "healthy" population which is only lightly exploited and likely capable of sustaining a somewhat higher level of harvest than is occurring under current regulations. This fishery occurs during about a two week period shortly after break-up and before fish disperse into summer feeding areas. Staff feel that rescinding the size limit and relaxing the spring closure, in combination with the 2 fish bag and possession limit would re-establish a consumptive, but sustainable fishery.

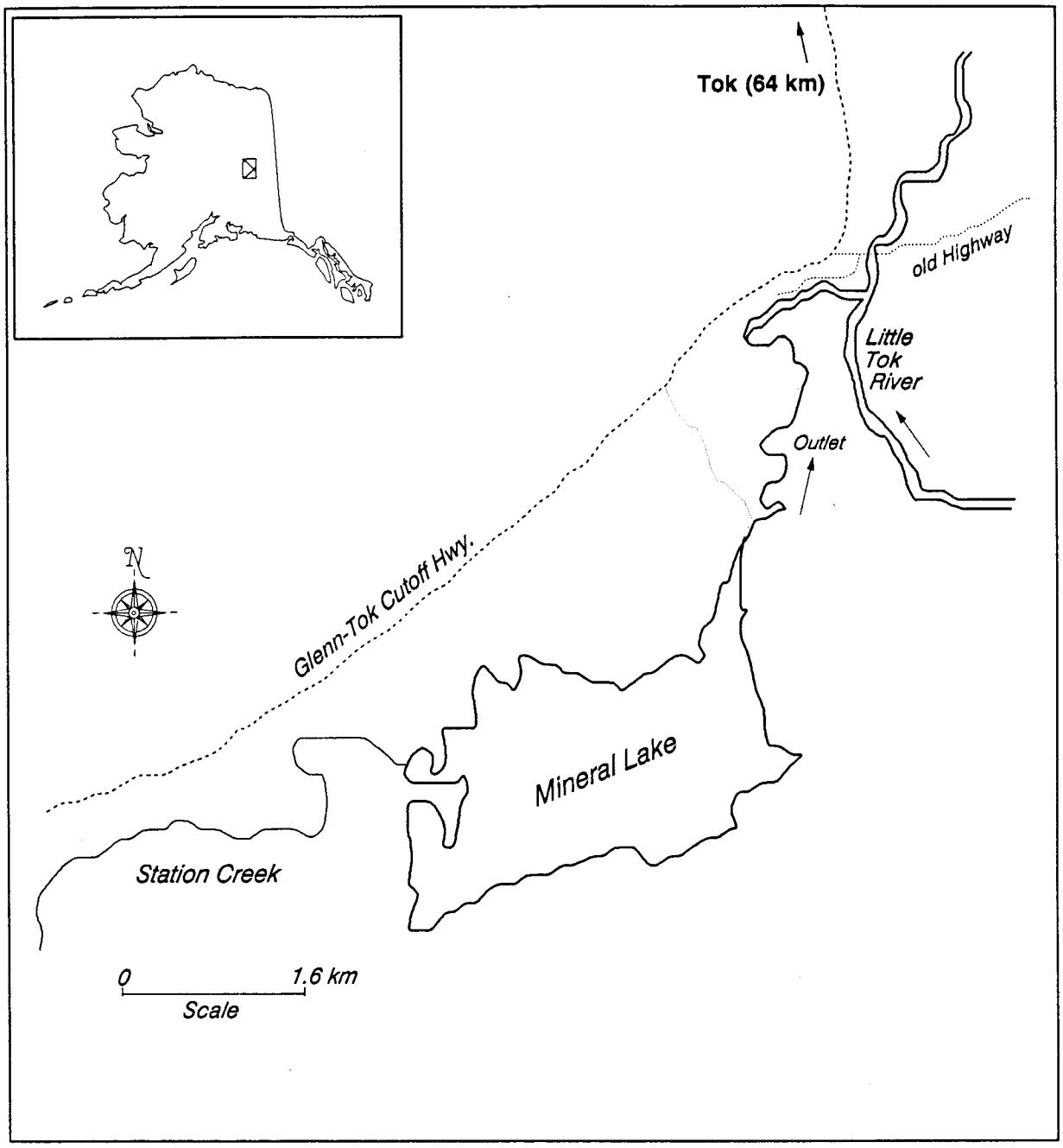


Figure 11. Map of Mineral Lake Outlet.

The Board passed proposal 286 as requested by Mr. Barker with a unanimous vote at 11:30 AM on February 8, 1992; thus rescinding the grayling catch and release season and the minimum size limit for grayling at Mineral Lake Outlet and instituting a 2 grayling bag and possession limit for the entire year at Mineral Lake Outlet.

PROPOSAL 287 - 5 AAC 70.050 WATERS CLOSED TO SPORT FISHING. This was an ADF&G staff proposal intended: (1) to close whitefish sport fishing in the section of the Chatanika River downstream from a department marker located approximately one mile [1.6 km] upstream from the Elliot Highway bridge from October 1 through April 30; and, (2) to close whitefish sport fishing in the section of the Chatanika River upstream from a department marker located approximately one mile [1.6 km] upstream from the Elliot Highway bridge from September 1 through April 30.

The proposal was read into the record by Jerome Hallberg at 11:31 AM on February 8, 1992, and he then provided staff comments as follows:

> Mr. Chairman, in each of the past two years, ADF&G has closed the whitefish sport fishery in the Chatanika River (Figure 1) by emergency order. The spear fishery opens by regulation on September 1 and typically lasts until freeze-up. Humpback whitefish and least cisco spawn in the Chatanika River and are the targeted species in this consumptive fishery. Annual harvest of least cisco by the recreational fishery has approached 24,000 fish (Figure 12) and annual harvest of humpback whitefish has approached 5,000 fish (Figure 13). These harvests make the Chatanika River, by far, the largest whitefish sport fishery in Alaska (Figure 14). Significant declines in abundance of least cisco (Figure 15) and humpback whitefish (Figure 16) have occurred. Further, recruitment failures of the 1985 and 1986 humpback whitefish population have occurred. Most of the least cisco are harvested in the month of September as they migrate upstream to spawn, whereas, most of the harvest of humpback whitefish occurs during the month of October as they migrate downstream after spawning (Figure 17). ADF&G staff believe that proposal number 287 will significantly reduce the harvest of both least cisco and humpback whitefish. The proposal if adopted accomplishes two things. First, the proposal will provide complete protection to whitefish upstream approximately one mile [1.6 km] above the Elliot Highway bridge from September 1 through April 30. Second, the proposal will limit the spear fishery to a month season (Figure 18). The staff recommends adoption of proposal number 287 as it is believed to be designed such that future harvests will be sustainable while at the same time allowing a reasonable portion of the Chatanika River to be open to spear fishing.

The Board passed this proposal with a unanimous vote at 11:45 AM on February 8, 1992.

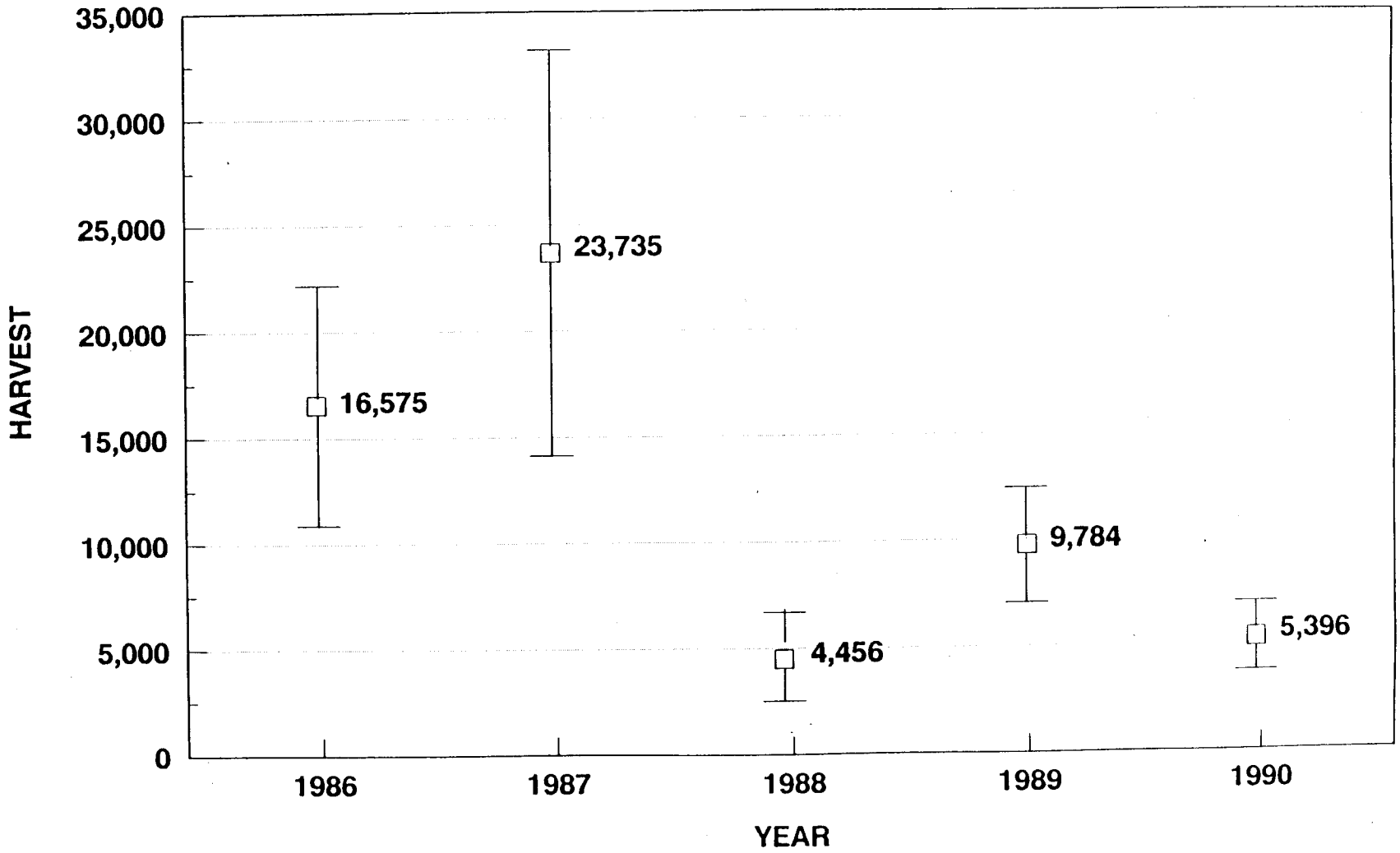


Figure 12. Harvest of least cisco by spear fishermen from the Chatanika River.

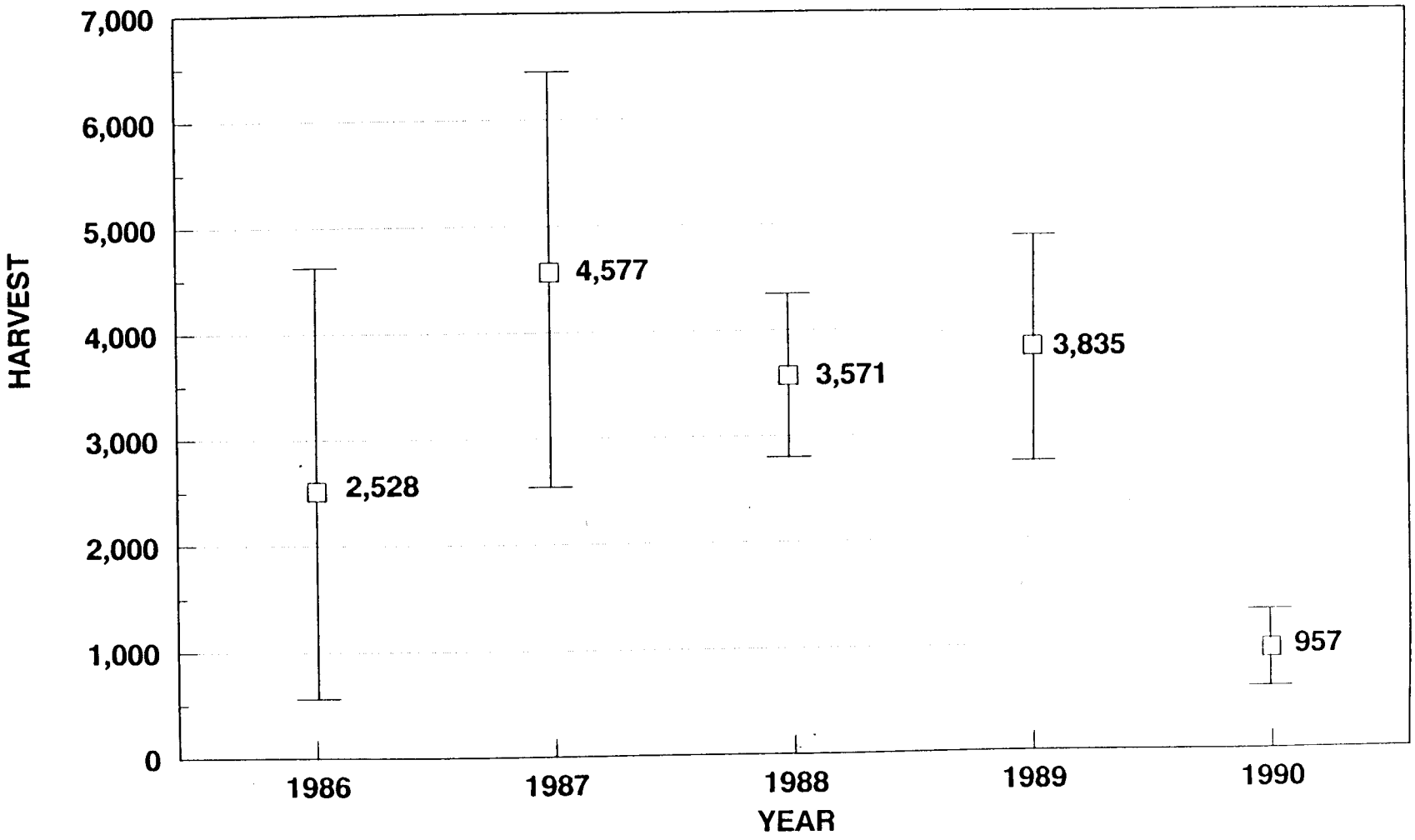


Figure 13. Harvest of humpback whitefish by spear fishermen from the Chatanika River.

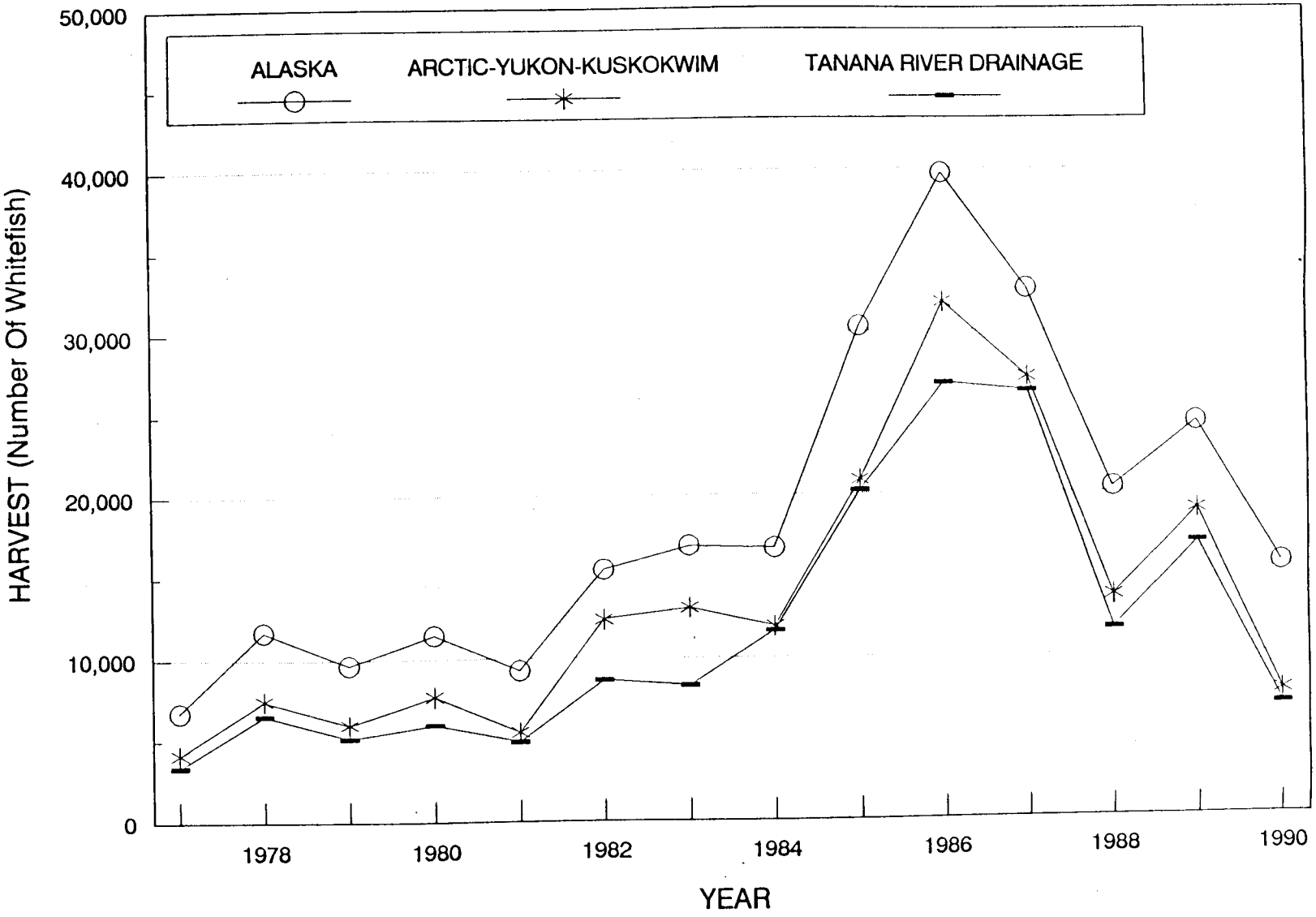


Figure 14. Harvest of whitefish by sport fishermen in Alaska, in the AYK Region, and in the Tanana regulatory area.

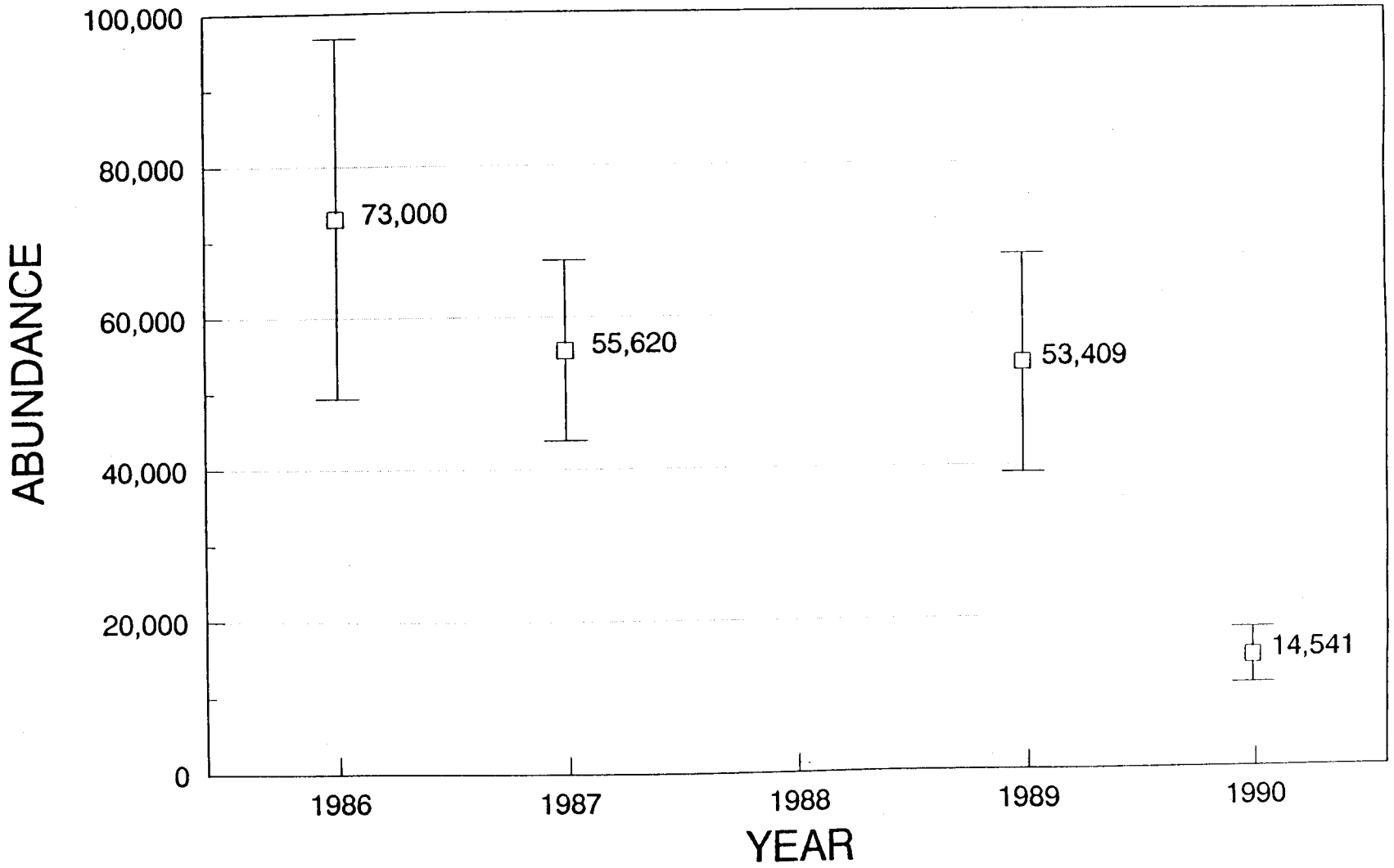


Figure 15. Estimated abundance of least cisco residing in the Chatanika River.

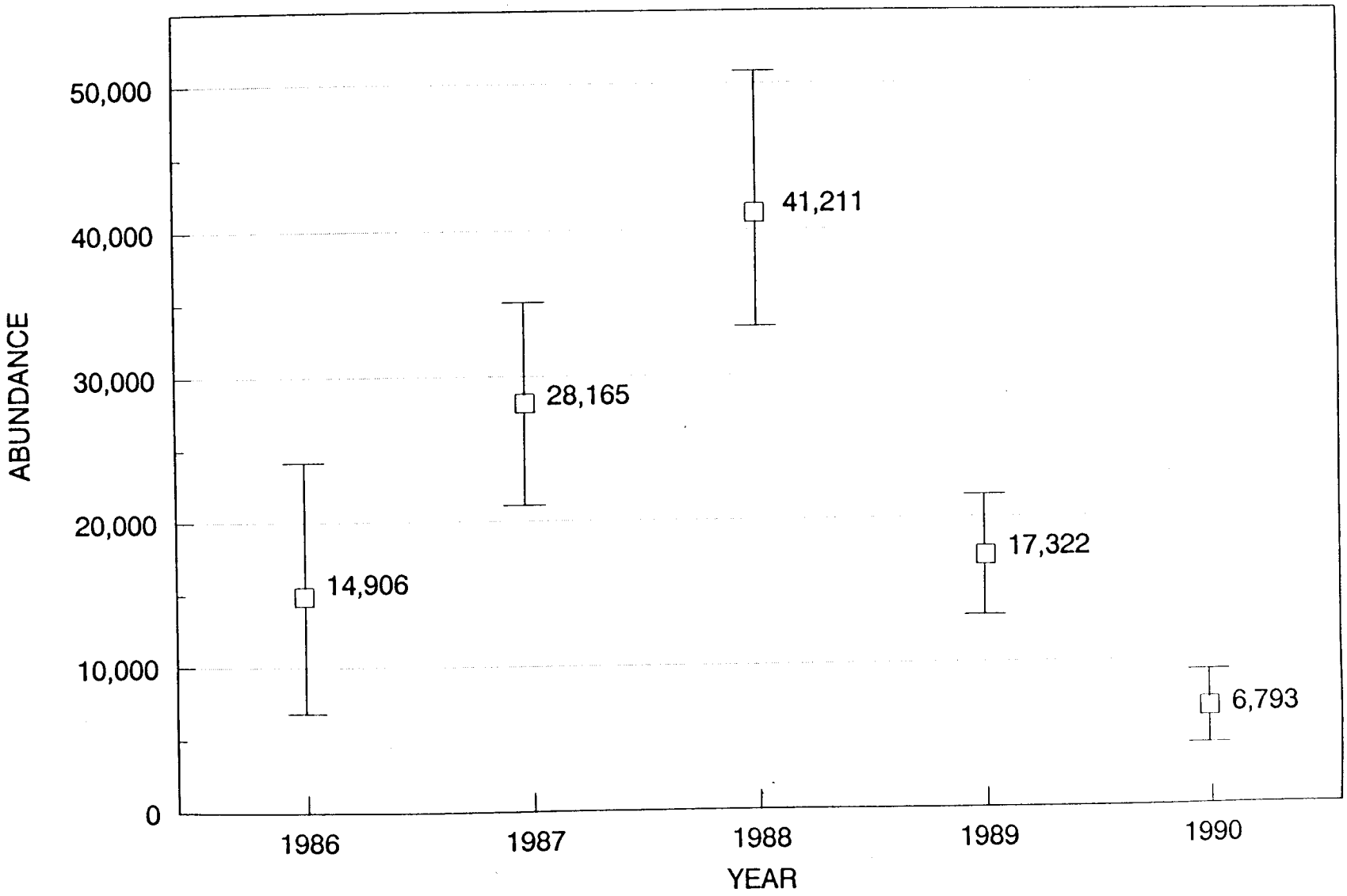


Figure 16. Estimated abundance of humpback whitefish residing in the Chatanika River.

HARVEST BY MONTH

HUMPBACK WHITEFISH

Year	September		October		Total
1986	430	(17%)	2,098	(83%)	2,528
1987	2,105	(46%)	2,472	(54%)	4,577
1988	1,750	(49%)	1,821	(51%)	3,571
1989	1,381	(36%)	2.454	(64%)	3,835
1990	354	(37%)	603	(63%)	957
		(37%)		(63%)	

LEAST CISCO

Year	September		October		Total
1986	12,928	(78%)	3,947	(22%)	16,575
1987	18,751	(79%)	4,984	(21%)	23,735
1988	3,751	(83%)	758	(17%)	4,456
1989	4,794	(49%)	4,990	(51%)	9,784
1990	2,266	(42%)	3,130	(58%)	5,396
		(66%)		(34%)	

Figure 17. Monthly harvests of whitefish from the Chatanika River by sport fishermen.

EXISTING REGULATIONS FOR WHITEFISH IN THE CHATANIKA RIVER.

Entire Year	Whitefish may be taken with hook & line - 15 per day, 15 in possession, no size limit
September 1 - April 30	Whitefish may be taken with spear or bow & arrow - 15 per day, 15 in possession, no size limit

REGULATIONS FOR WHITEFISH IN THE CHATANIKA RIVER IF PROPOSAL 287 IS ADOPTED.

	Downstream of Department Marker	Upstream of Department Marker
May 1 - Sept 31	Whitefish may be taken with hook & line 15 per day, 15 in possession, no size limit	
Sept 1 - Sept 31	Whitefish may be taken with spear or bow & arrow 15 per day, 15 in possession, no size limit	
Oct 1 - Apr 30	Closed to the taking of whitefish	
May 1 - Aug 31		Whitefish may be taken with hook & line 15 per day, 15 in possession, no size limit
Sept 1 - Apr 30		Closed to the taking of whitefish

Figure 18. Existing and proposed sport fishing regulations for whitefish sport fisheries in the Chatanika River.

PROPOSAL 288 - 5 AAC 70.020 BAG LIMITS, POSSESSION LIMITS, AND SIZE LIMITS; 5 AAC 70.035 METHODS AND MEANS. This was an ADF&G staff proposal intended to provide additional protection to northern pike populations in the Tanana regulatory area prior to and during their spawning period.

The proposal was read into the record by Jerome Hallberg at 11:46 AM on February 8, 1992, and he then provided staff comments as follows:

> Mr. Chairman, northern pike support a major sport fishery in the Tanana regulatory area (Figure 19). Staff and several anglers that have talked with staff are concerned that the level of harvest that occurs during the spring just before and during the time when northern pike are spawning is excessive. Spawning periods are critical. Large numbers of northern pike concentrate in shallow water areas during these times making them easy prey to anglers. Creel censuses conducted by ADF&G have shown that the harvest of northern pike during the two week spawning period often accounts for as much as 15% of the annual take by sport anglers. As angling effort throughout the Tanana regulatory area increases, staff anticipate harvest of northern pike to increase.
>
> At the time of the proposal deadline last spring, staff had not yet had sufficient time to work with the public to identify the best regulatory approach to this problem. Since that time, staff have worked with various members of the public and have developed an amended version of proposal number 288. The approach recommended by the staff is to establish the period from April 1 through May 31 as a catch and release only season for northern pike in waters of the Tanana regulatory area. This precautionary approach is an attempt by staff to provide a margin of protection to area wide populations of northern pike similar to what has been provided for high use northern pike fisheries in Harding Lake and Minto Flats. The amended version of proposal number 288, if adopted, will likely bolster northern pike populations and help preserve historic age, sex, and size structure of these populations across the Tanana regulatory area.

The Board considered an amendment to the original proposal. The amended proposal, called 288 A, was worded as follows:

PROPOSAL 288 A
5 AAC 70.050 WATERS CLOSED TO SPORT FISHING.
In the Tanana River drainage, northern pike may not be possessed or retained from April 1 through May 31.

The Board passed amendment 288 A to proposal number 288 with a unanimous vote at 11:50 AM on February 8, 1992. After several Board members stated their reasons for doing so, the Board then passed the amended proposal with a unanimous vote at 12:00 noon on February 8, 1992.

PROPOSAL 289 - 5 AAC 70.035 METHODS AND MEANS. This proposal was a carry over proposal from the 1989-90 meeting cycle of the Alaska Board of Fisheries. The proposal was originally submitted by the Bering Sea Advisory Committee and

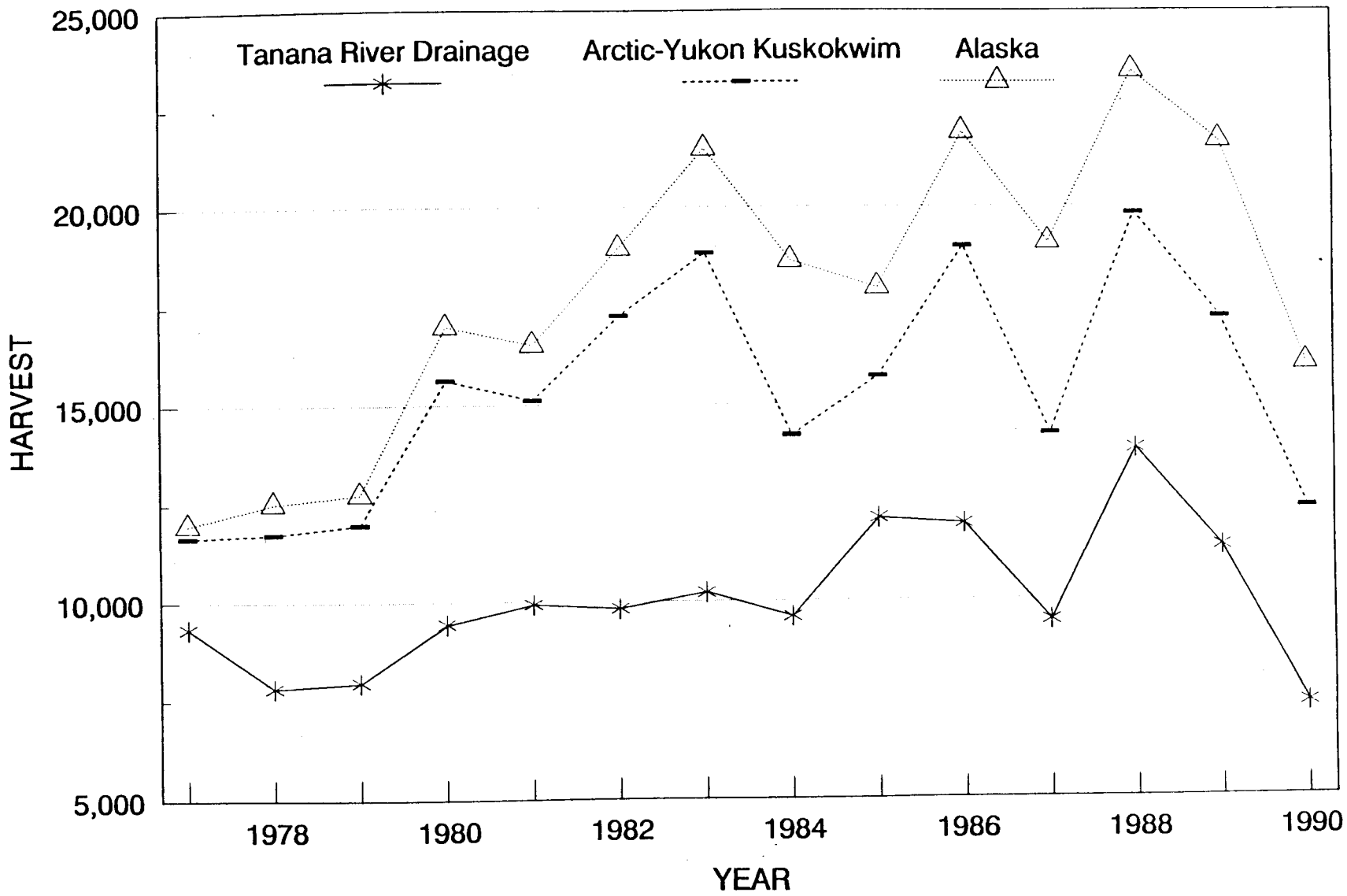


Figure 19. Harvest of northern pike by sport fishermen in Alaska, in the AYK Region, and in the Tanana regulatory area.

would have required sport fishermen fishing in the Goodnews River of Kuskokwim Bay to keep the fish they catch rather than allowing anglers to engage in catch and release fishing practices.

The proposal was read into the record by Frederick Andersen at 12:01 PM on February 8, 1992. Because the Board heard no testimony from the public nor staff concerning the relationship between this proposal and potential impacts to subsistence fishing practises and needs, the Board took no action on the proposal.

PROPOSAL 281 - 5 AAC 70.050 WATERS CLOSED TO SPORT FISHING. This was an ADF&G staff proposal intended to close specific marine waters of Norton Sound and certain freshwater drainages that flow into Norton Sound to sport fishing for chum salmon due to the depressed condition of the stocks.

The proposal was read into the record by Frederick Andersen at 7:00 PM on February 9, 1992, and he then provided staff comments as follows:

> Mr. Chairman, proposal number 281 was submitted as a companion proposal to proposal number 291 and is intended to help address the chum salmon conservation problem in sub-district 1 of Norton Sound (a commercial fishing designation). Because of chum salmon conservation concerns, the staff recommends that the Board close sport fishing for chum salmon in the marine waters of sub-district 1 as well as the freshwater drainages that flow into these marine waters.

The Board considered an amendment to the original proposal. The amended proposal, called 281 A, was worded as follows:

PROPOSAL 281 A
5 AAC 70.050 WATERS CLOSED TO SPORT FISHING.
(1) All freshwater drainages that flow into and the marine waters of Norton Sound between the west bank of the Sinuk River and Topkok Head are closed to the taking of chum salmon.

The Board passed amendment 281 A to proposal number 281 with a unanimous vote at 7:30 PM on February 9, 1992. After several Board members stated their reasons for doing so, the Board then passed the amended proposal with a unanimous vote at 8:00 PM on February 9, 1992.

LITERATURE CITED

Clark, Robert A. 1991. Mortality of Arctic grayling captured and released with sport fishing gear. Fishery Data Series Report Number 91-59. Alaska Department of Fish and Game, Sport Fish Division, Anchorage, Alaska. 28 pp.

APPENDIX A

Arctic-Yukon-Kuskokwim Report
to the
Alaska Board of Fisheries
Bethel, Alaska
February 1992

Alaska Department of Fish and Game

Division of Sport Fish

Arctic-Yukon-Kuskokwim Report to the Alaska Board of Fisheries

Bethel, Alaska

February 1992

Carl L. Rosier, Commissioner

Norval Netsch, Director

John H. Clark, Regional Supervisor

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OVERVIEW OF RECREATIONAL FISHERIES, STOCK STATUS AND REGULATORY RECOMMENDATIONS FOR THE AYK REGION OF ALASKA

A Report to the Alaska Board of Fisheries

Bethel, Alaska

February, 1992

Submitted by

Frederick Andersen, Management Supervisor
William D. Arvey, AYK Area Biologist
Alfred L. DeCicco, Nome Area Biologist
Jerome E. Hallberg, Fairbanks Area Biologist
James F. Parker, Delta Area Biologist

AYK Region of the Sport Fish Division
Alaska Department of Fish and Game
Fairbanks, Alaska 99701

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BACKGROUND

The purpose of this report is to provide the Alaska Board of Fisheries and others an overview of Arctic-Yukon-Kuskokwim Region recreational fisheries. The report contains summary information on the status of native stocks, as well as background information about proposed regulation changes to be considered at the February, 1992 hearing.

Area Description

The Arctic-Yukon-Kuskokwim (AYK) Region is the area of Alaska north and west of the Alaska Range (Figure 1). More than 400,000 square miles are included, approximately two-thirds of the land mass of the state of Alaska. Recreational fisheries in this area are managed by Sport Fisheries Division staff located in Fairbanks, Delta Junction and seasonally in Nome. The AYK Region includes most of the state's largest rivers (Yukon, Kuskokwim, Tanana, Koyukuk, Porcupine, Colville, Kobuk, and Noatak), thousands of lakes and thousands of miles of streams and rivers. The Sport Fish Division divides the Region into four management areas; the Fairbanks Management Area (the lower Tanana River Drainage), Delta Management Area (the upper Tanana River Drainage), Nome Management Area (Norton Sound and Kotzebue Sound drainages) and the AYK Area (the remaining portions of the Region) (Figure 1). Mainly for reasons of logistics, sport fisheries in the lower Kuskokwim River and Kuskokwim Bay are managed by the Division's Southcentral Region out of Dillingham.

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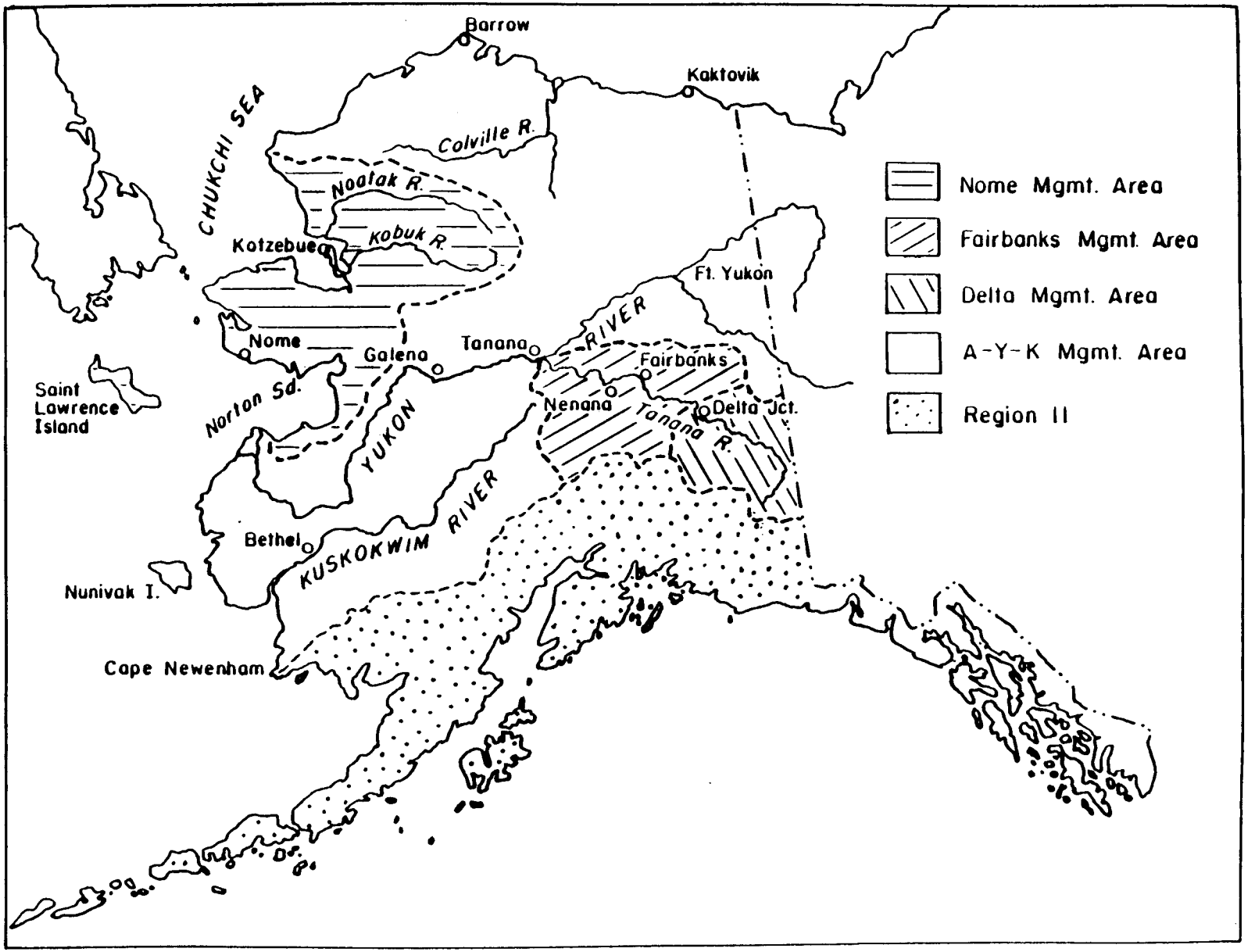

Figure 1. The Arctic-Yukon-Kuskokwim Region.

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As a whole, the region is sparsely inhabited, with an estimated population of 125,000 people. Fairbanks is the largest community and the Fairbanks North Star Borough includes nearly 60% of the region's population. Over 75% of all recreational fishing effort in the AYK Region occurs in the Tanana Drainage. An estimated 48,000 recreational anglers fished in the region in 1990 and they harvested approximately 174,000 fish, all species combined (Table 1). Estimated harvests have ranged from 174,000 to approximately 264,000 during the recent 5 year period (Table 2). Numbers of angler days fished have increased from about 123,000 in 1977 to 246,000 in 1990 (Figure 2).

Management Objectives

Primary objectives in managing AYK recreational fisheries are to protect, maintain, and manage for sustainable yield the naturally occurring fish populations and, to the extent possible, provide and maintain a diversity of quality sport fishing opportunities.

Fisheries Research

Stocks of resident fish are evaluated to determine levels of sustainable yield, and to ensure that regulation and management of the region's sport fisheries are based upon the best biological information that the State can afford. Studies conducted during the 1990 and 1991 field seasons included assessment of northern pike, Arctic grayling, burbot, lake trout, Dolly Varden and whitefish populations. Studies have been conducted and are currently underway to determine angler attitudes and regulation preferences using mail-out surveys and on-site creel censuses.

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Table 1. Number of anglers and areas fished, AYK Region 1984-1990.

Area Fished	1984	1985	1986	1987	1988	1989	1990
Arctic-Yukon-Kuskokwim							
Tanana River Drainage	33,726	32,939	34,805	35,699	36,911	38,731	38,031
Kuskokwim River Drainage	4,059	2,689	2,397	3,775	3,310	3,688	2,691
Seward Peninsula-Norton Sound	4,421	3,399	3,381	2,697	3,001	3,052	3,233
Northwest Alaska	1,262	1,922	1,649	2,191	990	1,063	1,008
North Slope Brooks Range	1,230	2,357	1,854	1,551	1,052	1,423	1,158
AYK Total	44,455[a]	43,574[a]	45,248[a]	45,542[a]	45,606[a]	48,705[a]	47,799[a]

[a] Statewide and regional angler totals do not equal regional or area sums because some anglers fished in more than one region.

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Table 2. Arctic-Yukon-Kuskokwim sport fish harvest by species 1986-1990.

Species	1986	1987	1988	1989	1990
Salmon Species:					
Chinook	2,860	2,193	3,818	3,413	1,805
Sea-Run Coho	8,693	8,441	11,950	10,251	6,610
Landlocked Coho/Chinook	24,061	26,624	32,342	18,614	13,943
Sockeye	439	1,364	1,528	456	818
Pink	3,404	1,322	3,859	3,765	7,994
Chum	4,336	2,768	3,692	5,882	2,146
Other Species:					
Rainbow Trout	31,774	32,416	79,944	75,432	64,618
Lake Trout	3,250	1,113	2,730	3,605	1,743
Dolly Varden/ Arctic Char	10,373	12,369	12,147	14,272	8,261
Arctic Grayling	65,725	57,956	68,961	71,637	37,506
Northern Pike	18,996	14,222	19,824	17,183	12,330
Whitefish	31,770	27,159	13,630	18,932	7,701
Burbot	5,611	4,017	3,878	4,894	5,483
Sheefish	3,721	2,597	3,221	2,306	750
Smelt	464	7,080	2,476	2,424	1,709
Halibut	0	36	0	0	144
Other Fish	1,349	0	371	371	614
Total	216,826	201,677	264,371	253,437	174,175

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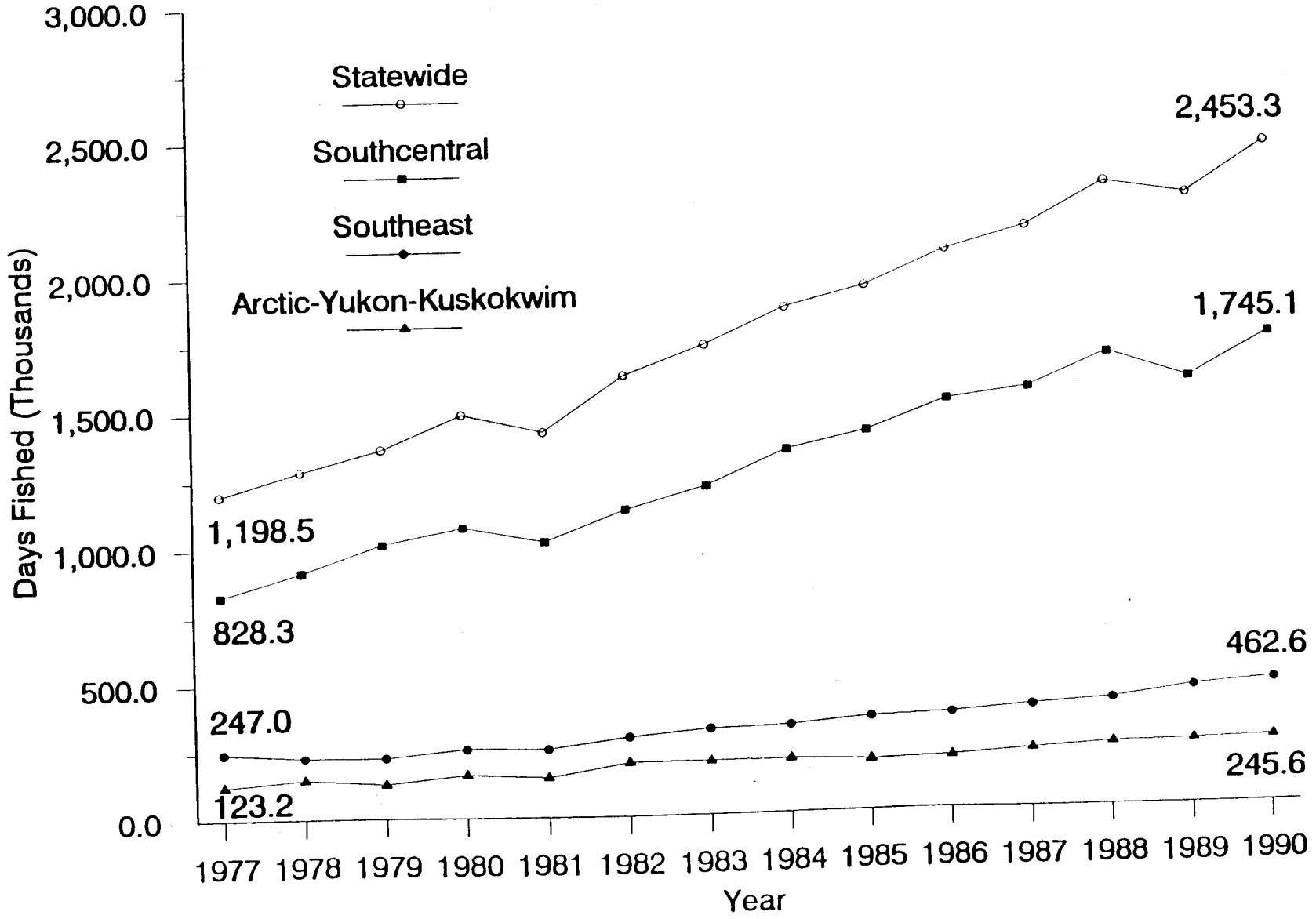

Figure 2. Angler-days, statewide, and by region, 1977-1990.

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ENHANCEMENT PROGRAM

In 1987, the State discontinued an experimental salmon enhancement program at Clear Hatchery. Since that time the facility has been dedicated to the research of and production of fish for the recreational fishery stocking program using sport fishery dedicated funding. The hatchery currently produces Arctic grayling and Arctic char. Rainbow trout from the Fort Richardson Hatchery in Anchorage and coho salmon reared at Big Lake Hatchery near Wasilla are also stocked into waters of the Tanana drainage. Fish stocking in the Tanana River Valley is intended primarily to divert harvest pressure away from naturally occurring fish populations (which can withstand only moderate levels of exploitation), and to increase angling opportunities by providing more species than are available naturally.

Approximately 100 landlocked lakes, ponds and abandoned gravel pits are stocked annually in the Tanana River drainage. The majority of these lakes are located in the middle and upper portions the Tanana River drainage and are road-accessible; approximately 10 remote lakes (accessible only by air or all-terrain vehicle) are also stocked on a regular basis. In addition to the landlocked lakes, one stream (Piledriver Slough) has been stocked with rainbow trout since 1987.

Winter ice fishing accounts for a significant proportion of the annual sport fishing effort on the larger, more accessible stocked lakes such as Birch and Quartz lakes. Hatchery fish (notably rainbow trout, Arctic char, and coho

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salmon) support an increasingly large share of the harvest (64% in 1990) within the Tanana River drainage.

During 1991, Sport Fish Division staff evaluated stocking efforts in Harding, Birch and Quartz lakes and Piledriver Slough. In addition, experiments were conducted at Harding Lake to determine growth and survival rates of pen-reared rainbow trout.

Proposal 282 is submitted by the staff to increase and make uniform the bag and possession limit for rainbow trout in all waters of the Tanana drainage.

FISH STOCKS

Native populations of Arctic grayling, northern pike, burbot, lake trout, Dolly Varden, Arctic char, whitefish, sheefish, and several species of salmon occur throughout the region and support a variety of recreational fisheries. Naturally occurring populations of rainbow trout are found only in the lower portion of the Kuskokwim drainage and those fisheries are managed by biologists stationed in the Dillingham office. Rainbow trout are not indigenous to the Yukon River drainage, or to any of the Bering Sea drainages north of the Kuskokwim River.

Arctic Grayling

Arctic grayling are popular with recreational anglers, are generally abundant, and occur in most clear water streams and rivers and in many lakes throughout

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the region. Important grayling fisheries in the Tanana drainage occur in Piledriver Slough, the Delta Clearwater, Chatanika, Salcha and Chena rivers and in the Tangle Lakes and Fielding Lake. Several streams on the Seward Peninsula support quality fishing for this species. A multitude of high quality stream and lake grayling fisheries exists in the Yukon and Kuskokwim river drainages, on the North Slope and in northwest Alaska, however they receive little fishing effort. Estimated 1990 harvest of Arctic grayling in the AYK Region was 37,500 fish of which approximately 28,000 were harvested in the Tanana drainage.

During the early and mid-1980's, some Tanana drainage populations of Arctic grayling such as those in the Chena River, Richardson Clearwater River and Shaw Creek were over-harvested. As a result, more restrictive sport fishing regulations were adopted by the Board of Fisheries in early 1987. In general, population declines were arrested and stocks have entered a period of stabilization and rebuilding.

The Chena River Arctic grayling population failed to respond to harvest restrictions. While the sport harvest was greatly reduced for two years (1987 and 1988), the 1989 harvest of Arctic grayling increased to approximately 14,000 fish and fishing effort increased to about 40,000 angler-days (Figure 3). In March of 1990, the Board of Fisheries adopted additional conservation measures for the Chena River drainage. These new regulations lowered the daily bag and possession limit to two fish per day, eliminated the use of multiple hooks and prohibited the use of bait. As with previously

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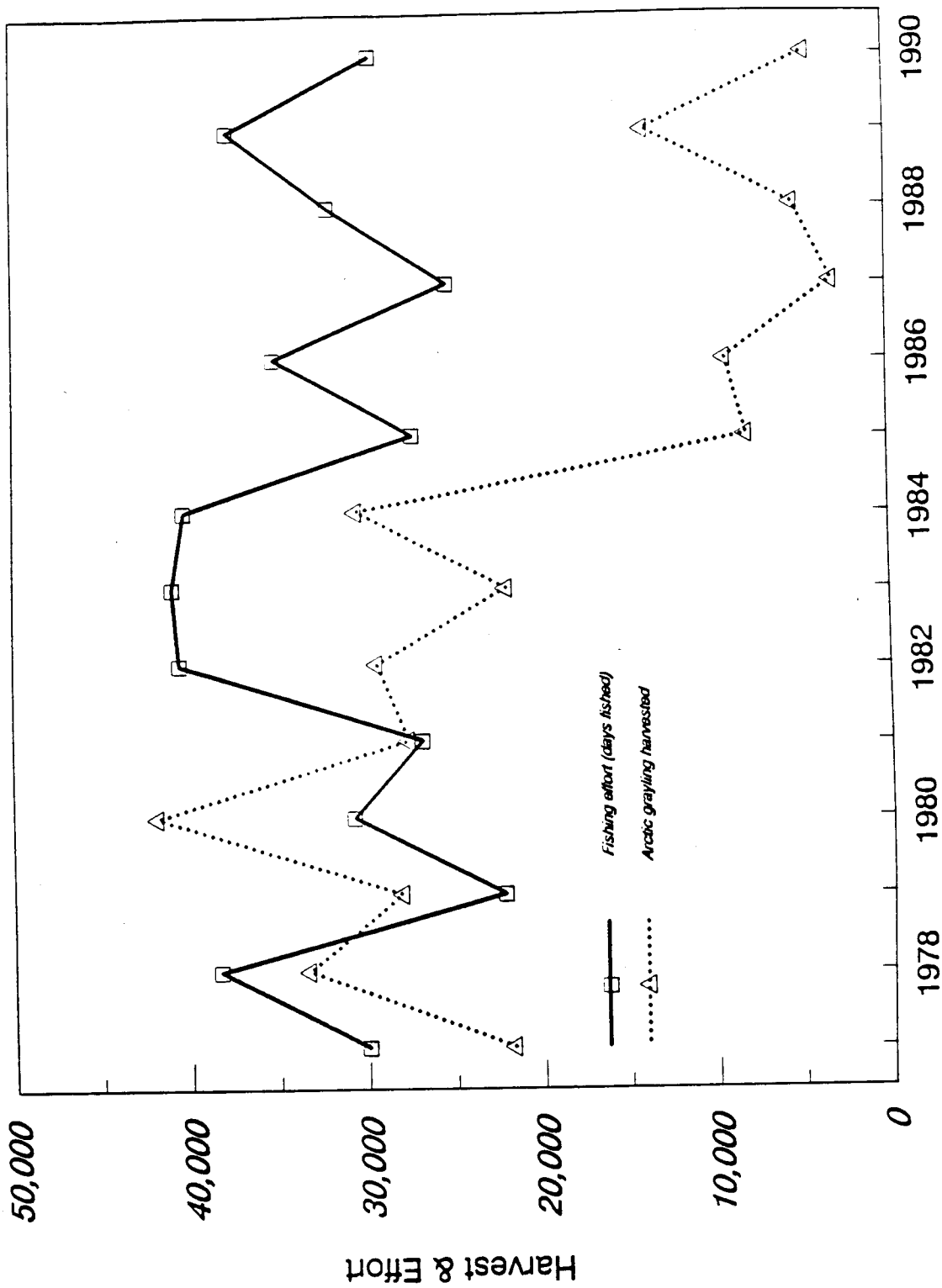

Figure 3. Chena River Arctic grayling harvest & effort, 1977-1990.

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enacted regulations, these additional restrictions also failed to contain the harvest within sustainable limits.

Proposal # 283 requests establishment of a catch and release fishery on a section of the Chena River. Following the proposal deadline (April 1991), ADF&G issued an emergency order that allowed only catch-and-release fishing, for the entire Chena River, effective July 1, 1991, because during the summer of 1991, ADF&G field studies indicated a lack of population rebuilding. The staff has prepared an amended version of this proposal which, if adopted, would make catch and release fishing mandatory for the entire river, and make the emergency order restriction permanent. This no harvest policy, in combination with proposed supplemental production from Clear Hatchery is expected to allow a rapid rebuilding of the stock. If successful, a partial relaxation of these regulations (allowing some harvest) would be possible by 1994.

Three other proposals would affect management of Arctic grayling fisheries in the AYK Region. Staff urges adoption of proposals 284 and 285 which would impose conservation restrictions on Arctic grayling sport fisheries on a portion of the Chatanika River and on Nome Creek. Proposal 285 would restrict the take of Arctic grayling on the Chatanika River. While comparative abundance estimates of Chatanika River grayling are not available, population characteristics (age and size data) indicate that over-harvest is occurring. Restrictions to the fishery are considered necessary to prevent further damage to the resource. Proposal 284 is submitted in response to a plan by the

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Bureau of Land Management to extend and upgrade road access to Nome Creek and to develop a major campground at the road terminus, which will be on Nome Creek. Little data exist on the Nome Creek Arctic grayling population however the planned road will parallel this small stream and make much of it accessible to anglers. The proposed fishery restrictions are precautionary but are considered necessary in view of the dramatic increase in use that this area is likely to receive.

Proposal 286 is a public proposal which would repeal the size limit and spawning season closure for Arctic grayling at Mineral Lake outlet (near Tok Junction) and would establish a two fish bag and possession limit. In addition to catch and release regulations which are in force during the spring (April 1 to the first Saturday in June), current regulations require that Arctic grayling be 12 inches or greater in length for harvest and prohibit the use of bait. Current regulations were enacted in 1987 in response to public concern over a perceived decline in abundance and smaller average size of Arctic grayling. Although estimates of abundance are not available, assessment of the Arctic grayling population at this site in 1988 and again in 1990 indicates that the population has not been over-harvested and is capable of sustaining the current level of harvest and perhaps more.

Because this fishery occurs during the spring spawning migration, Mineral Lakes Arctic grayling are subject to harvest for only a brief period as they move upstream from the Little Tok River. It is likely that relaxation of the

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existing regulations are compatible with a sustainable fishery, and the staff does not oppose the proposed changes.

Anadromous Salmon

Anadromous runs of chinook, chum, coho, and pink salmon occur throughout most portions of the AYK Region. These resources support viable commercial and critically important subsistence fisheries in Norton Sound, Kotzebue Sound and the Yukon and Kuskokwim river drainages. Estimated annual sport harvest for the 1986-1990 period is approximately 21,000 salmon, (all species combined). The largest sport fishery for salmon in the region occurs in the Norton Sound/Seward Peninsula area where the average annual harvest (1986-1990) is estimated at approximately 10,000 fish (Table 3). The majority of this catch is composed of pink and coho salmon.

Other important salmon sport fisheries occur in the Tanana River drainage. Sport fishing for chinook salmon in this area takes place in the Salcha, Chena and Chatanika rivers. Combined annual harvests from these rivers are estimated to total 400 to 800 chinook salmon per year. Other recreational salmon fisheries in the Tanana management areas include Clear Creek, a tributary of the Nenana River (chinook and coho salmon) and the Delta Clearwater River near Delta Junction where the coho salmon run supports a growing sport fishery.

In the Tanana drainage, sport fishermen are allowed to retain one chinook salmon 16 inches or greater in length and 10 less than 16 inches. Sport

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Table 3. Arctic-Yukon-Kuskokwim Region sport salmon harvests, all species combined, 1977-1990.[a]

Year	Tanana River Drainage	Kuskokwim River Drainage	Seward Peninsula/ Norton Sound	Northwest Alaska	Yukon River Drainage	North Slope Brooks Range	Total
1977	494	931	3,718	59	109	0	5,311
1978	460	2,334	8,990	254	909	0	12,947
1979	759	1,356	6,546	37	189	0	8,887
1980	1,491	3,685	10,840	95	34	0	16,145
1981	1,403	2,827	6,564	54	34	0	10,882
1982	1,734	6,779	19,757	3,447	284	11	32,012
1983	1,844	5,748	11,135	463	479	283	19,952
1984	1,754	6,312	17,982	351	91	0	26,490
1985	3,407	2,808	3,610	429	134	0	10,388
1986	2,848	5,684	9,913	811	476	0	19,732
1987	2,353	6,893	5,976	529	287	50	16,088
1988	3,581	9,422	10,715	254	820	55	24,847
1989	3,693	9,034	9,587	51	1,312	0	23,677
1990	2,213	3,971	12,439	0	750	0	19,373

[a] Mills 1990

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fishermen are also allowed three salmon of other species (coho, chum, pink, and sockeye) daily and an additional 10 salmon under 16 inches in length. In the AYK Region outside of the Tanana Drainage, the bag and possession limit for chinook salmon is three per day and in possession, only two of which can exceed 28 inches, except for the Kuskokwim River Drainage and on the Seward Peninsula where the bag limit is one fish daily. Bag and possession limits for other salmon species is 10 per day and in possession in most of the AYK Region. In the Kuskokwim River Drainage, 5 fish daily and in possession are allowed while on the Seward Peninsula, 10 fish are allowed except that no more than three can be chum or coho salmon.

The staff has submitted five proposals which relate to anadromous salmon fisheries. Proposal 277, would establish a spawning ground closure for Chatanika River chinook salmon. Harvests of chinook salmon from this road accessible river have increased in recent years and although data are incomplete, estimated harvest in some years has exceeded observed escapement. Similar regulations protect spawning salmon in the Chena and Salcha rivers. Proposals 278 and 280 would simplify current Tanana drainage salmon fishing regulations by deleting references to salmon 16 inches in length or smaller.

Proposal 281 requests closure of the sport fishery for chum salmon in a portion of Norton Sound. Poor returns of chum salmon have required emergency order closures of both subsistence and recreational fisheries in the Nome River during 1990 and of the entire Nome sub-district in 1991. This is a companion proposal to Proposal 291 submitted by Commercial Fisheries Division

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staff which would impose similar restrictions on the subsistence chum salmon fishery in the same areas. Staff favors adoption of both proposals.

Proposal 279 seeks to clarify regulations by establishing a uniform bag limit for salmon in Tanana River drainage lakes. Current regulations provide variable daily bag and possession limits depending on size of fish caught. Salmon in Tanana drainage lakes are stocked and do not reproduce. For this reason, there are no conservation concerns for these stocked fish and there are no biological reasons for a size limit.

Northern Pike

Northern pike occur throughout the AYK Region except north of the Brooks Range where their abundance and distribution is very limited. Northern pike are commonly found in sloughs, slow moving portions of streams and rivers, and in low-lying lakes throughout most of the region.

Harvest and recreational fishing effort for northern pike have increased in recent years. Harvest statistics for the 1986-1990 period indicate that the statewide recreational harvests average approximately 20,000 northern pike per year. Of those, roughly 17,000 are harvested in the AYK Region and the majority of that catch (62%) comes from the Tanana River drainage (Figure 4).

In most of the AYK Region, northern pike populations are only lightly exploited and are thought to be capable of sustaining current levels of sport

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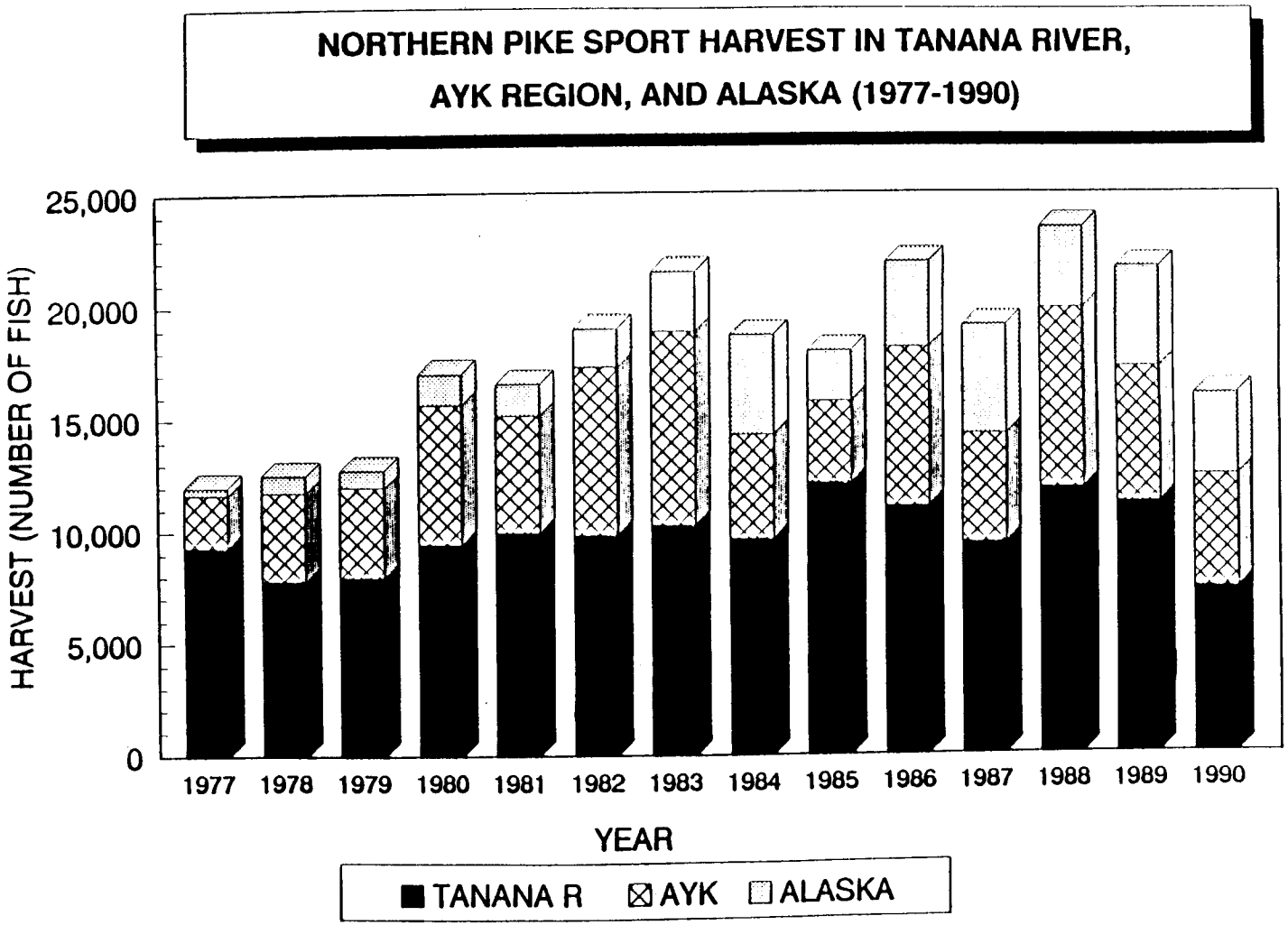

Figure 4. Alaska northern pike harvests, 1977-1990.

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harvest. In the Tanana River drainage where fishing effort is most intense, the status of stocks has been investigated at a number of locations including

Minto Flats, Volkmar, Harding, George and T lakes. In easily accessible areas such as Harding Lake and Minto Flats, northern pike populations have been over-harvested. Those situations have been addressed by imposing restrictive regulations to limit harvest and allow stocks to rebuild.

Because of recent growth in fishing effort, the likelihood of future increases and the demonstrated vulnerability of northern pike to overharvest, the staff feels that additional regulatory protections are required in some areas.

Proposal 288 lists several regulatory options that could effectively provide needed safeguards. The staff recommends adoption of mandatory catch and release regulations for northern pike in Tanana River drainage lakes effective April 1 through May 31, Such a regulation would allow continuation of a non-consumptive fishery during the spawning season yet provide protection during a period of critical importance and heightened vulnerability.

Whitefish

Whitefish are abundant throughout the AYK Region and are found in almost every freshwater habitat type. Seven species of whitefish including round, broad, humpback, least cisco, Bering cisco, Arctic cisco and sheefish can be found in northern and western Alaska.

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Whitefish spawn in late fall, and river resident whitefish often undertake long migrations to spawning grounds. Age at maturity varies depending on species but is known to range from 2 years to 7 years. The primary human use of whitefish is for subsistence purposes, however subsistence whitefish harvest estimates are available for only a few specific locations. Important subsistence whitefish fisheries occur in the Yukon-Kuskokwim Delta, Kobuk River, in the upper Tanana River drainage, on the North Slope and in other locations, usually where salmon runs do not occur or where salmon are not abundant. With the exception of a small commercial fishery for whitefish on the North Slope which has continued since the 1960's, commercial effort for this species has been sporadic and limited in the AYK Region. Whitefish are not an important component of the sport harvest in most of the AYK Region, but whitefish are important as a forage base for other species of fish and for subsistence use.

Spears are legal sport gear throughout the Tanana River drainage and the Chatanika River near Fairbanks supports the only major recreational fishery for this species. Estimated Chatanika River whitefish harvests have ranged from approximately 8,000 to 25,000 during the 1986-1988 period but dropped dramatically because of population declines first documented in 1990 (Figure 5). Stock assessment work conducted in 1990 and 1991 indicated precipitous declines in the abundance of age 4 and 5 humpback whitefish and in the proportion of age 4 least cisco. These year classes typically make up the majority of the spawners and the bulk of the harvest of both species in the

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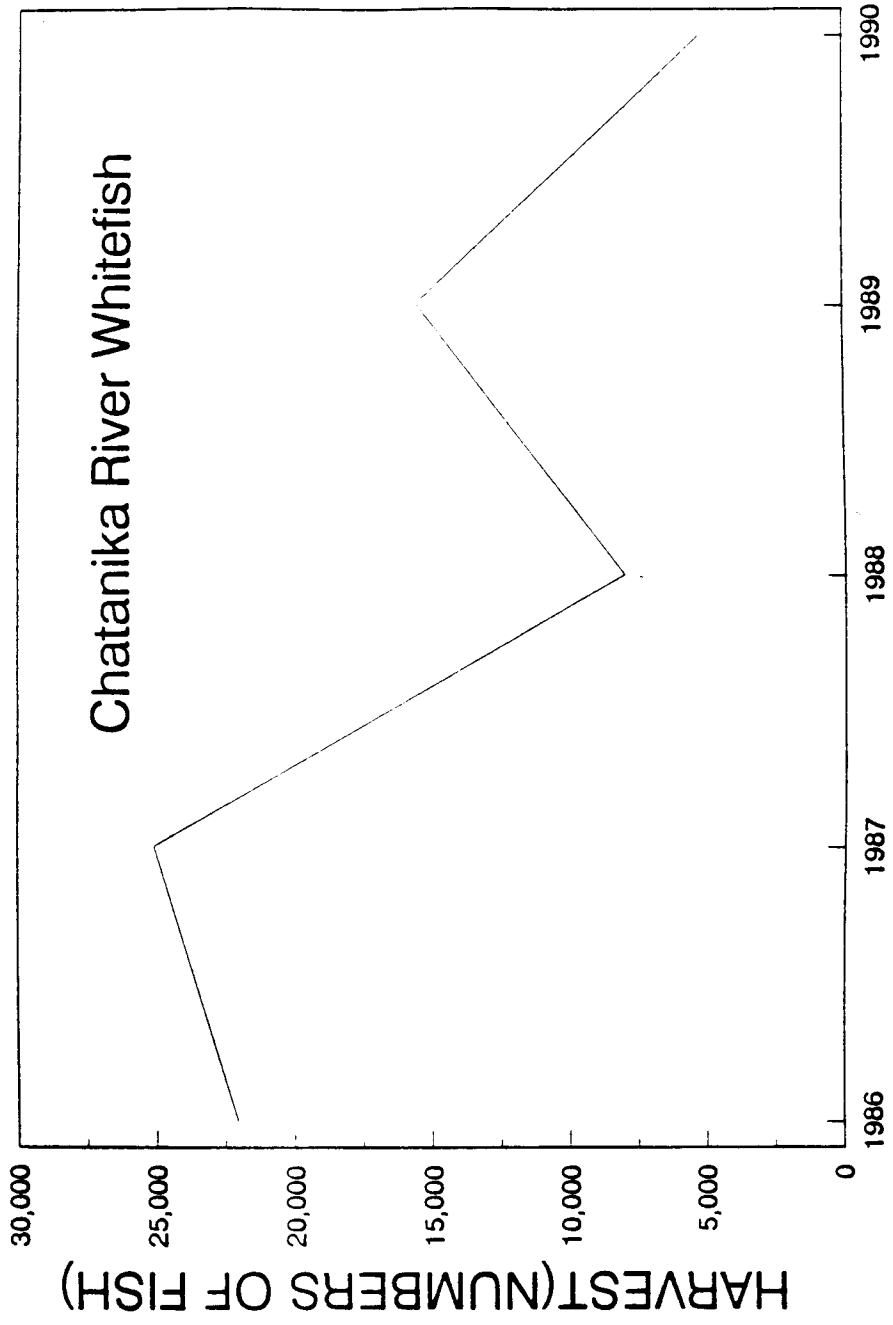

Figure 5. Chatanika River whitefish harvests, 1986-1990.

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spear fishery. The Department responded to these findings by issuing emergency order closures of the sport fisheries in both 1990 and 1991. In 1991, the fishery was closed before any significant harvest was made.

Current regulations adopted by the Board provide for a September 1 to April 30 spear fishing season and allows spearing to occur in the entire Chatanika River. If adopted, staff Proposal 287 would limit the spear fishery to a one month season and would close a portion of the river to spearing. Both actions are designed to limit harvest and yet provide a limited consumptive fishery to resume.

Burbot

Burbot is the only freshwater member of the cod family and is common to lakes and rivers throughout central and northern Alaska. Burbot caught on sport gear average 20 to 30 inches in length and in the Yukon and Tanana River drainages, 18 to 20 pound fish are not uncommon.

Burbot normally mature by age 6 and spawning occurs during winter months; females grow larger than males and may discharge as many as 2,500,000 eggs. Little is known about life history of young burbot but they likely feed on planktonic organisms for several months until they switch to a diet of insects and insect larvae. At 12-15 inches in length (age 3-4) they shift to a diet composed largely of fish. Tag and recovery information from burbot in the Tanana River indicates a general trend of upstream movement for fish

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throughout their lives, but no significant annual migrations are known to occur.

Except near a few population centers, these fish are largely unexploited by recreational (or other) fishermen. The statewide harvest has been estimated at about 12,000 fish per year since 1986, however estimated harvests have declined to the 9,000-10,000 fish range during the past three years, probably owing to stock depletions and fishery closures in lakes of south central Alaska. The AYK Region component of the statewide harvest is approximately 5,000 fish annually and the majority of this harvest comes from the Tanana River near Fairbanks.

Declines in abundance of some (road-side) lake populations of burbot were documented in the mid-1980's. By Board action however, bag limits were reduced and the use of set-lines was prohibited in several locations. Research conducted in subsequent years has indicated that affected populations are recovering. No proposals have been submitted to alter sport fishing regulations for burbot in the AYK region.

Lake Trout

Lake trout are found in many higher elevation lakes throughout the region. This is a highly specialized species with narrow environmental tolerances. They are adapted to environments characterized by cold, clear and deep water.

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Lake trout grow and mature slowly and live many years and the impact of even a modest fishery on this species can be significant.

As with most species in the AYK Region, lake trout are only lightly exploited with the exception of some road-accessible populations in the Tanana River drainage. In recent years, estimates of the annual statewide harvest of lake trout has ranged from 12,000 to 21,000 fish. Of these, an average of 3,000 are taken in the AYK Region and approximately half of that harvest occurs in the Tanana River drainage. In 1990, approximately 1,700 lake trout were taken in the AYK Region sport fisheries and an estimated 12,600 were taken Statewide.

Lakes in the eastern Interior such as Fielding, Landmark Gap, Glacier, Sevenmile, and the Tangle lakes all contain lake trout and support recreational fisheries for that species. Lake trout are also found in the Kobuk and Noatak river drainages in northwest Alaska and in addition, they occur in mountain and foothill lakes on both the north and south slopes of the Brooks Range as well as in major river drainages (Canning, Colville, and Sagavanirktok) on the North Slope.

AYK Region regulations governing the recreational harvest of lake trout were restructured in 1987 when daily bag limits were reduced from 12 to 2 fish per

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day in the Tanana River drainage and from 12 to 4 fish per day elsewhere in the region. Available biological and harvest data indicates that current regulations are sufficient to maintain catches within sustainable limits. No proposed regulation changes regarding lake trout in the Arctic-Yukon-Kuskokwim region have been submitted for Board consideration at the Bethel meeting.

Dolly Varden and Arctic Char

Dolly Varden and Arctic char (char) occur in most waters of northern and western Alaska in either the anadromous, river resident, lake resident or stream dwarf forms. Important concentrations of anadromous Arctic char occur in northwest Alaska in the Noatak, Wulik, and Kivalina rivers, and in the Canning, Kongakut, Hulahula and Sagavanirktok rivers on the North Slope and in many Norton Sound rivers. Other, smaller populations are found in the Anvik, Nulato and Melozitna rivers and in numerous other rivers and lakes throughout the AYK Region.

AYK Region sport harvests of Arctic char/Dolly Varden for the recent five year period are estimated at 11,500 fish per year which represents approximately 10% of the statewide sport harvest. Although reliable subsistence catch data are not available, it is thought that the majority of the Dolly Varden harvest in northern Alaska is made by subsistence users in Kotzebue Sound and Norton Sound villages.

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The daily bag and possession limit for Dolly Varden/Arctic char is 10 fish (no size limit) in most areas of the AYK region. No conservation problems are known to exist within the region and no proposals to change regulations for this species have been submitted.

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